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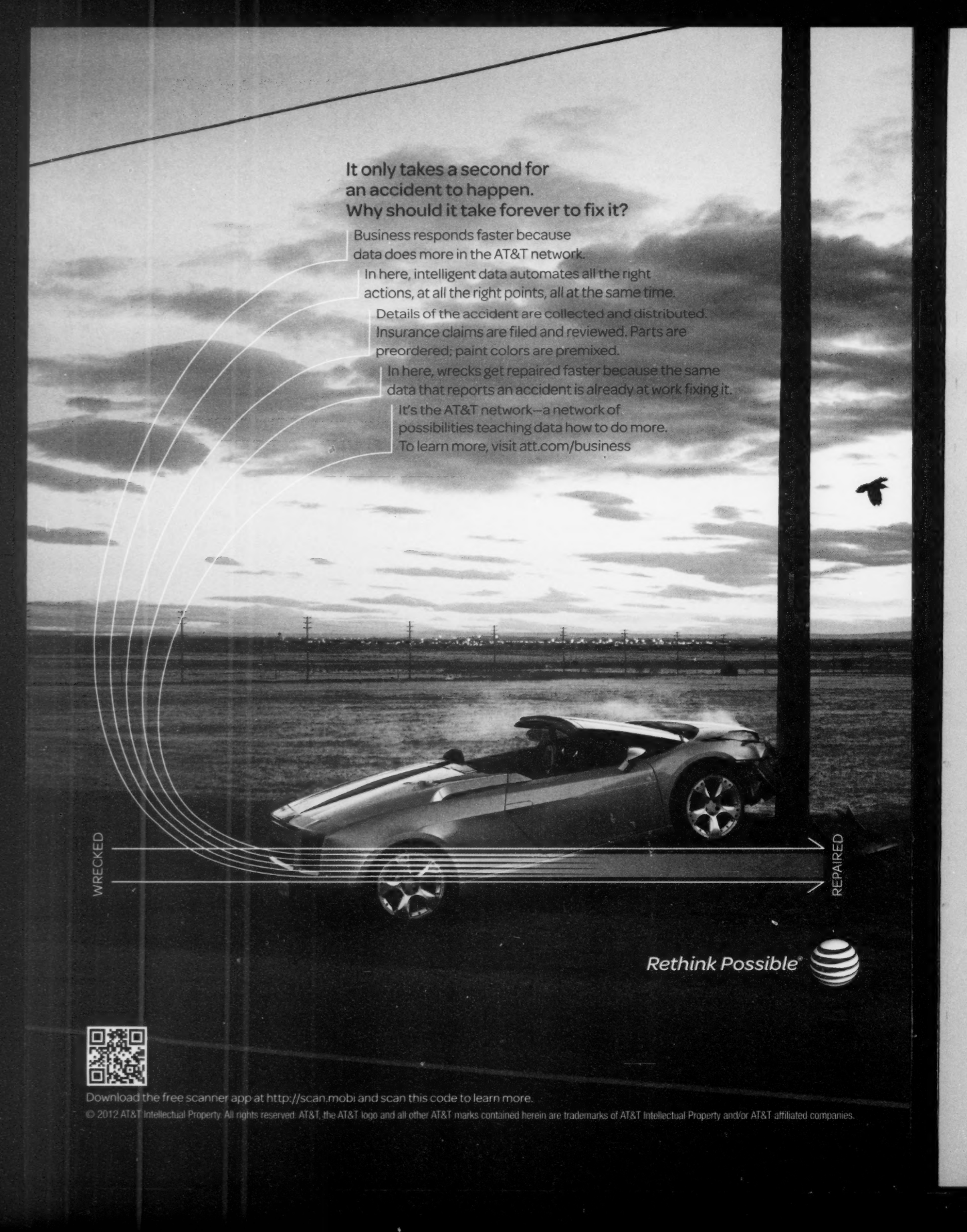
Also inside: Can Android Tablets Take On iPad? | Cloud Brings Foreign IT Dollars to U.S.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SECURITY

Facial Recognition May Need Regulating

CONGRESS MIGHT need to pass legislation to limit the way government agencies and private companies use facial recognition technology to identify people, a U.S. senator said recently.

The growing use of facial recognition tools raises serious privacy concerns, said Sen. Al Franken (D-Minn.), chairman of the Senate Judiciary Committee's privacy subcommittee.

During a subcommittee hearing, Franken called on the FBI and Facebook to change the way they use facial recognition technology. "I believe that we have a fundamental right to control our private information," he said.

No existing U.S. laws limit the use of facial recognition tools in the public or private sectors, said people who testified before the subcommittee. The FBI and the Department of Homeland Security have huge databases of biometric identifiers, and they're adding facial data to them. Meanwhile, Facebook users are uploading 300 million photos to the social networking site every day, said Jennifer Lynch, an attorney for the Electronic Frontier Foundation. "Many Americans don't even realize that they're already in a facial recognition database," she said.

The FBI is testing facial recognition tools in criminal cases, said Jerome Pender, a deputy assistant director in the FBI's Criminal Justice Information Services Division. It uses a mugshot database that doesn't contain photos of people who have never been arrested, he said.

Others who testified said the technology is a useful tool that helps police arrest the correct people more quickly.

– Grant Gross, IDG News Service

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SOFTWARE

Vendors Reach Out to Users Who Resist Upgrades

Hoping to raise awareness about the importance of keeping software up to date, several major software companies, including Microsoft and Symantec, participated in an initiative called International Technology Upgrade Week earlier this summer.

Upgrades have been hotly debated of late: Several weeks ago, Jono Xia, a former Mozilla employee, blasted updates in general, and those for Firefox specifically, as productivity sinkholes. Xia called on developers to think about the concerns of users who have to deal with the inconvenience of working with software that's constantly changing.

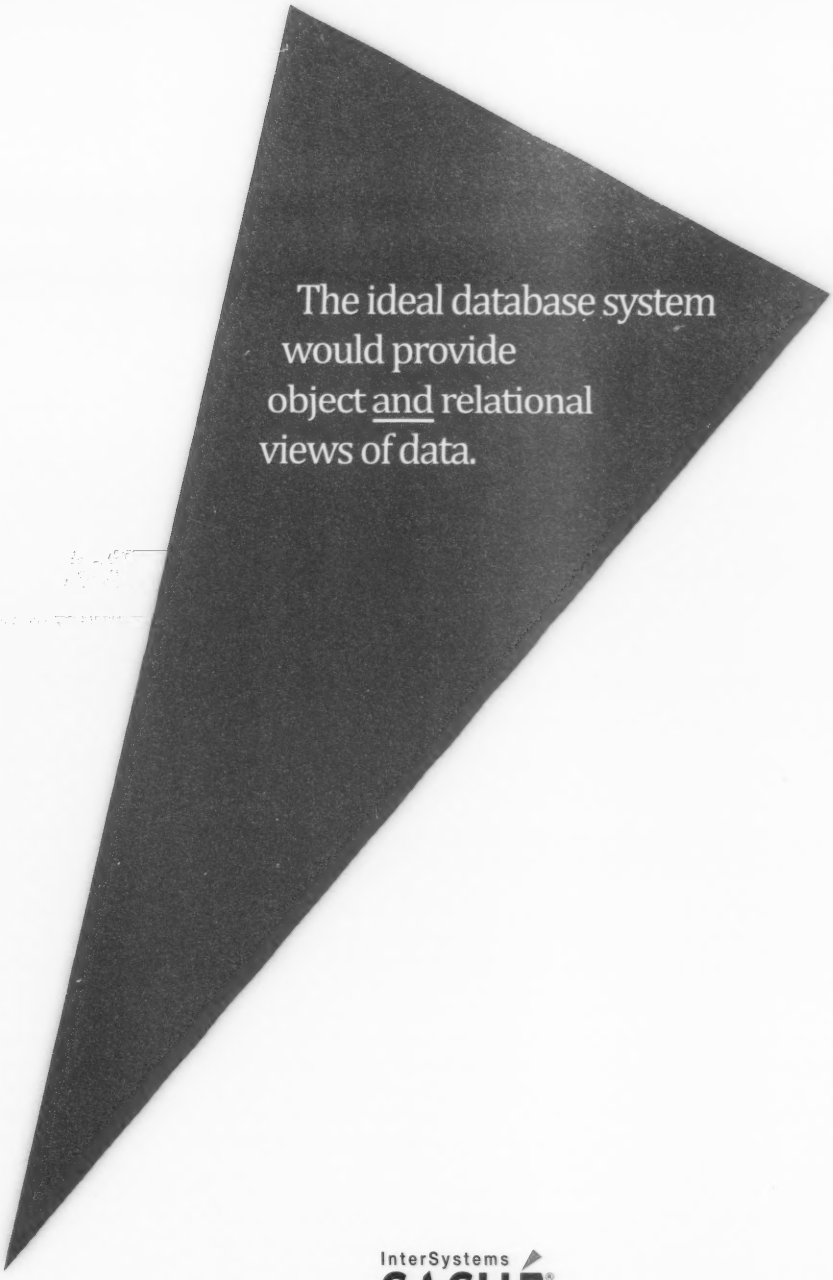
"A tool isn't very useful if the way you used it yesterday suddenly doesn't work tomorrow," Xia said.

Symantec, Tom Tom and Skype – acquired by Microsoft last year – were among the vendors touting upgrade week. They might face an uphill battle in trying to change users' minds about upgrades.

In a Skype survey, 25% of the respondents said they decline updates because they see no benefit in them, and 26% said they don't understand what the upgrades are meant to accomplish.

Four of 10 adults said they don't upgrade software when first prompted. And of the 75% who said they receive upgrade prompts, half said they don't install new code until they see an alert three to five times.

– GREGG KEIZER



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BETWEEN THE LINES
By John Klossner

SECURITY

NSA Chief Seeks Help From Hackers

GEN. KEITH B. ALEXANDER, the director of the National Security Agency, asked hackers for help securing cyberspace when he spoke at the Defcon conference late last month.

"This is the world's best cybersecurity community," said Alexander, who also heads the U.S. Cyber Command. "In this room right here is the talent our nation needs to secure cyberspace."

Hackers can and must be part of a collaborative approach with the government and private industry, he said. "You know that we can protect networks and have civil liberties and privacy, and you can help us get there."

Alexander congratulated the organizers of Defcon Kids, an event held to teach children how to be white-hat hackers, and described the initiative as superb.

He stressed the need for better information sharing between private industry and the government. Pointing out that the country can't take steps to thwart cyberattacks that aren't on its radar screen, Alexander said it would be helpful if businesses could share information from their intrusion-detection systems with the NSA in real time. He added that the agency currently has no way to predict if, for instance, Wall Street is facing a threat.

The next step would be to jointly develop standards to help secure critical infrastructure and other sensitive networks, he said.

Already, the hacker community has built many of the tools needed to protect cyberspace and should continue to create even better ones, he said, giving the example of Metasploit and other penetration-testing tools.

"Sometimes you guys get a bad rap," he said. "From my perspective, what you're doing to figure out vulnerabilities in our systems is great. You guys hold the line."

According to a *New York Times* report, Alexander had earlier revealed that there was a 17-fold increase in cyberattacks against U.S. infrastructure between 2009 and 2011.

– Lucian Constantin, IDG News Service

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CYBERCRIME

The medical records of some

21 million

U.S. patients have been exposed in 477 data breaches over the past three years.

SOURCE: U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

APP DEVELOPMENT

Oracle Halts Open-Source HPC Project

Oracle researchers are winding down development of the Fortress programming language for high-performance computing, an effort started nearly 10 years ago by Sun Microsystems.

The Defense Advanced Research Projects Agency, which originally funded Fortress, pulled its backing in November 2006. Work continued at Sun and Oracle, however.

"We feel that our effort has been worthwhile," Fortress project architect and well-known computer scientist Guy Steele said in a blog post. "Many aspects of the Fortress design were novel, and we learned a great deal from building an interpreter and an initial set of libraries."

However, Steele said that the project faced "severe technical challenges" in recent years, including a "mismatch" between Fortress and "a virtual machine not designed to support it" – and that includes not only Java VM but every currently available VM, he said.

Work on Fortress will gradually come to a stop over the next few months, Steele said. The code base will remain open source, and Oracle's Programming Language Research Group will continue to respond to queries about Fortress.

– CHRIS KANARACUS, IDG NEWS SERVICE

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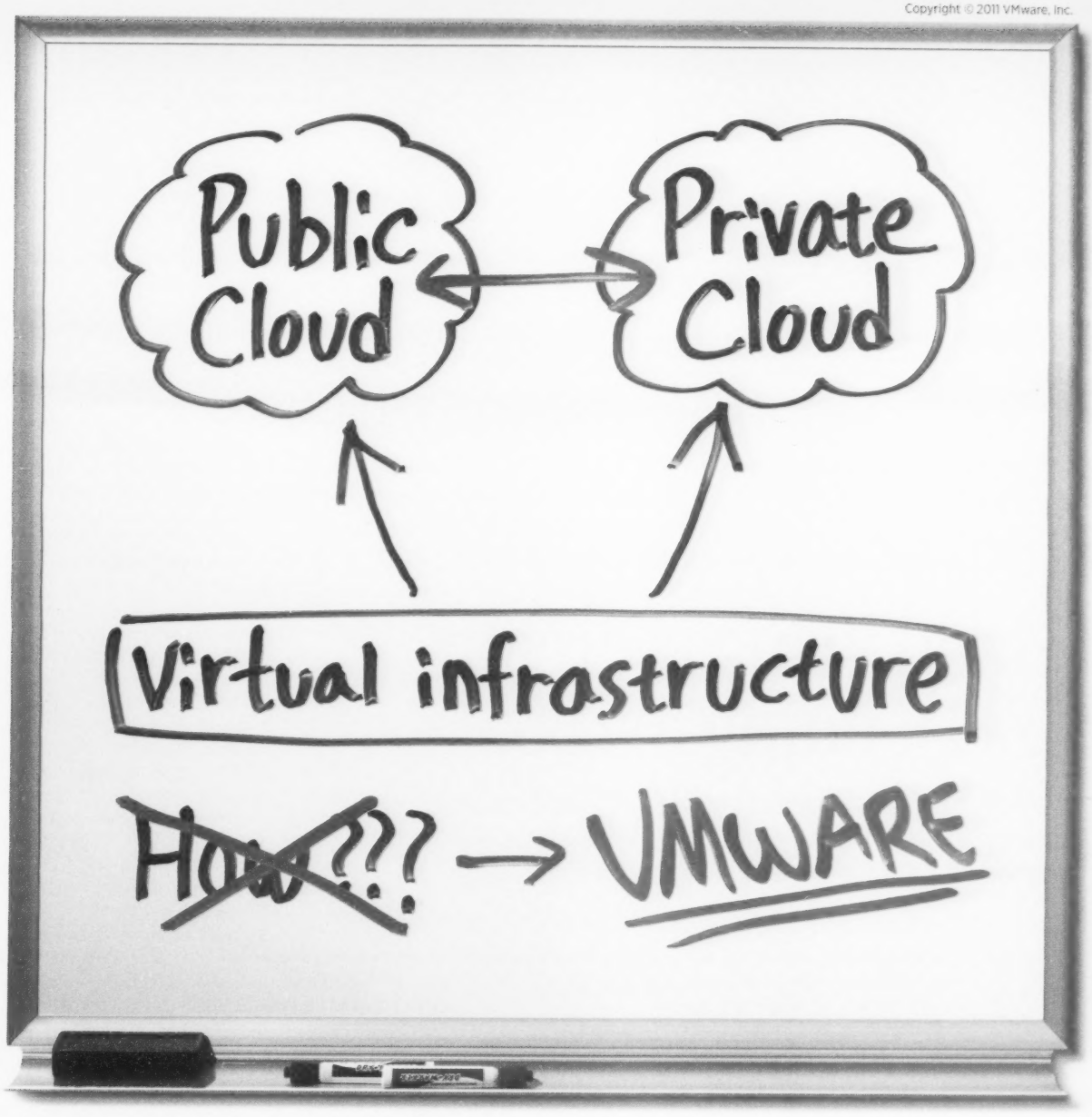

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IT systems hosted in the U.S. could help run Grupo Posadas properties like the Fiesta Americana hotel in Cozumel.

Cloud Brings Foreign IT Spending to U.S.

A Mexican hotel chain and others let U.S. providers host their systems despite 'FUD' campaigns that aim to raise questions about security risks. By Patrick Thibodeau

U.S.-BASED CORPORATIONS and government agencies have been shipping application development work to offshore IT services providers for years.

Now, thanks to cloud computing, foreign companies are starting to bring their business to providers of data center services located in this country.

Consider Grupo Posadas, a large hotel company in Mexico that today relies on five data centers to support more than 17,000 guest rooms in over 100 hotels. Grupo Posadas IT personnel run three of those data centers; the other two are run by outsourcing partners.

Later this year, most of the company's IT capability will be moved to a data center in Texas run by Savvis, a hosted services provider based in Town and Country, Mo., said Grupo Posadas CIO Leopoldo Toro Bala.

The U.S. data center will provide cloud-based infrastructure and managed database services, according to Toro Bala.

By moving some operations to Texas, the Posadas IT group will have more time to focus on developing systems like mobile and social networking tools that could help the business grow, he added.

"Our IT strategy is aligned to our growth, and our growth means that we need to be flexible and agile," he said.

The shift to the cloud will not affect IT costs. Instead, it will provide capabilities that will help streamline deployments of new IT systems, said Toro Bala. Previously, implementing a new system often required new equipment that could take months to deploy.

Cloud computing makes it possible to deploy new services in a matter of weeks. "That is the type of capability that we were lacking — that agility," said Toro Bala

Meanwhile, as U.S. providers of cloud-based services start to attract foreign customers, some countries are enacting laws to protect their domestic providers, and some foreign companies are overseeing so-called FUD (fear, uncertainty and doubt) campaigns designed to raise questions about the security of U.S. data centers, said Daniel Castro, an analyst at the Information Technology and Innovation Foundation.

For instance, ads by Deutsche Telekom and other companies claim that their cloud products are more secure than those of U.S. vendors because U.S. companies have to comply with laws such as the Patriot Act, executives from industry groups and tech vendors told a U.S. House of Representatives subcommittee during a hearing late last month.

"We commonly see almost absurd positioning of what the Patriot Act permits," said Justin Freeman, the corporate counsel of Rackspace, a provider of hosted services.

Such marketing efforts, said Castro, represent a significant threat to U.S. providers of cloud-based services.

"The potential market for cloud computing is very large, and the U.S. right now is the country that stands to gain the most from it," said Castro, who also testified at the hearing.

Castro said most countries have laws that are similar to the Patriot Act, and some, including Canada and Australia, allow businesses to turn over data voluntarily to government agencies. A U.S. company would violate its terms of service if it did that, he said.

Concerns about a lack of security or privacy in U.S. data centers didn't affect the outcome of the outsourcing decision at Grupo Posadas, which has a long history of working with U.S. IT companies, said Toro Bala.

Grant Gross *of the IDG News Service contributed to this story.*

> "Our IT strategy is aligned to our growth, and our growth means that we need to be **flexible and agile**."
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> LEOPOLDO TORO BALA, CIO, GRUPO POSADAS

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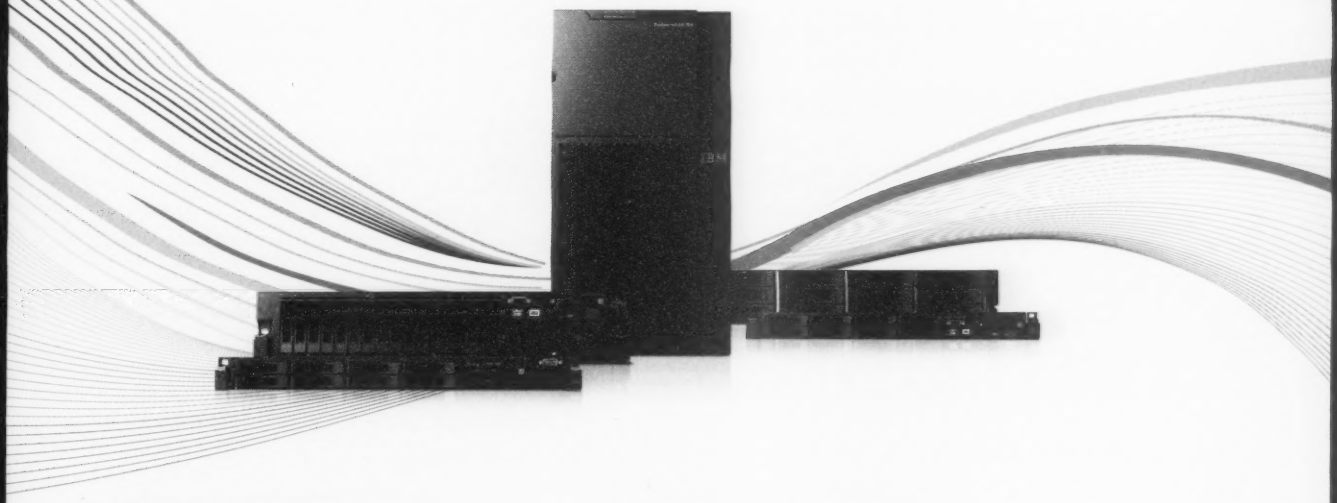

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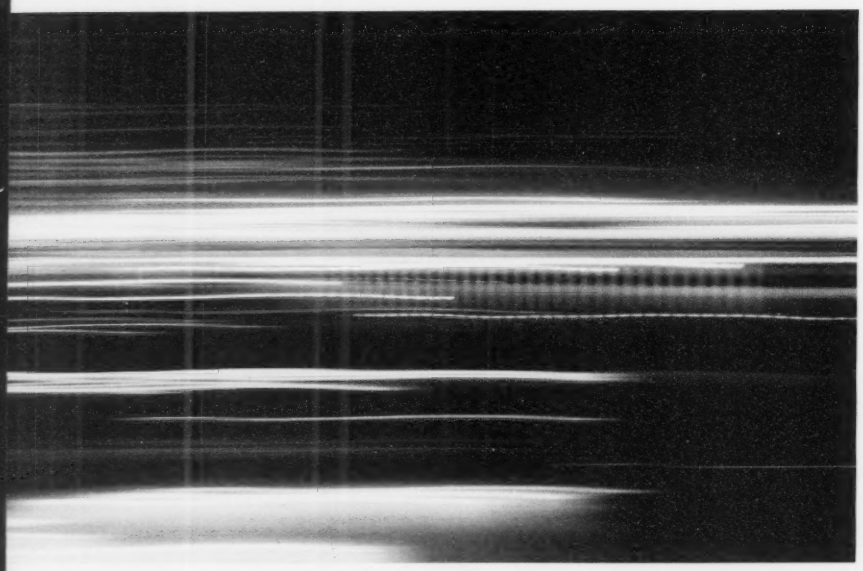

Flash Storage Can Help Some IT Operations

All-flash storage systems are speedy – and expensive. But IT execs say they can be cost-effective for certain enterprises. By Lucas Mearian

AMD RECENTLY deployed a 6TB NAND flash storage array into a virtual server test environment and got some amazing results, says Fred Abounader, a performance systems engineer at the chip maker.

In virtualization benchmarking tests, the all-flash WhipTail array helped reduce latency by a factor of 50 and yielded a 40% performance improvement over the company's hard disk drives (HDD).

While the array is running in a test environment, the data is real, consisting of email, databases, Web 2.0 applications and more. "It's like a real life data center," said Abounader.

AMD is looking to determine whether its servers could be overcommitted and still run the business.

With just one 6TB flash array from WhipTail, the system was able to achieve 86,000 I/Os per second (IOPS) for virtual machines that typically saw only 6,000 IOPS using a SAN with 400 15,000-rpm hard drives connected by a Fibre Channel network.

After a few months of testing, "there have been zero issues," said Abounader.

AMD is part of a small but growing universe of companies that are either evaluating or adopting flash technology — both all-flash arrays and less-expensive solid state drives (SSD). Flash has long been seen as a promising technology, but its high cost continues to scare off most IT executives.

In a recent TheInfoPro survey of 255 IT professionals, about 7% of the respondents said they currently use all-flash arrays and 6% said they plan to deploy the technology within 18 months. Meanwhile, 37% said they plan to deploy less-expensive SSD technology, up from just 7% a year earlier.

"We see that flash is starting to change the business world," said Kobi Rozengarten, a managing partner at Jerusalem Venture Partners, an investment firm.

Rozengarten is quick to admit that NAND flash storage will never beat the per-gigabyte price of HDD systems. But for applications like virtual desktop infrastructures and online relational databases, the technology can be very cost effective, he contends.

Vail Systems, a telephony service provider, turned to an all-flash setup to boost database response times, said David Fruin, vice president of engineering.

Vail runs interactive customer care and conference-call voice response systems, mostly for banks and insurance companies. As the volume of calls increased, Vail's HDDs couldn't keep up.

So Vail initially added 2.5-in. Intel SSDs to its Dell servers and later installed two 1TB PCIe flash modules from Virident Systems. The SSDs yielded a fourfold improvement in performance over the HDDs. And then the PCIe modules improved performance by a factor of 10. "We were looking for four times improvement and we got 10 times, so we were surprised," said Fruin.

Fruin acknowledged that the technology is expensive — each Virident module cost $13,000. But other systems aren't necessarily cheaper. "[Flash costs] a lot of money," he said, "[but] the alternative was to throw a lot of RAM into the boxes, which is even more expensive." ◆

> "[Flash costs] a lot of money, [but] the alternative was to **throw a lot of RAM** into the boxes, which is even more expensive" — DAVID FRUIN, VICE PRESIDENT OF ENGINEERING, VAIL SYSTEMS

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THE Grill

Mike Capone

Even with continued success, ADP's CIO keeps the pressure on to avoid complacency.

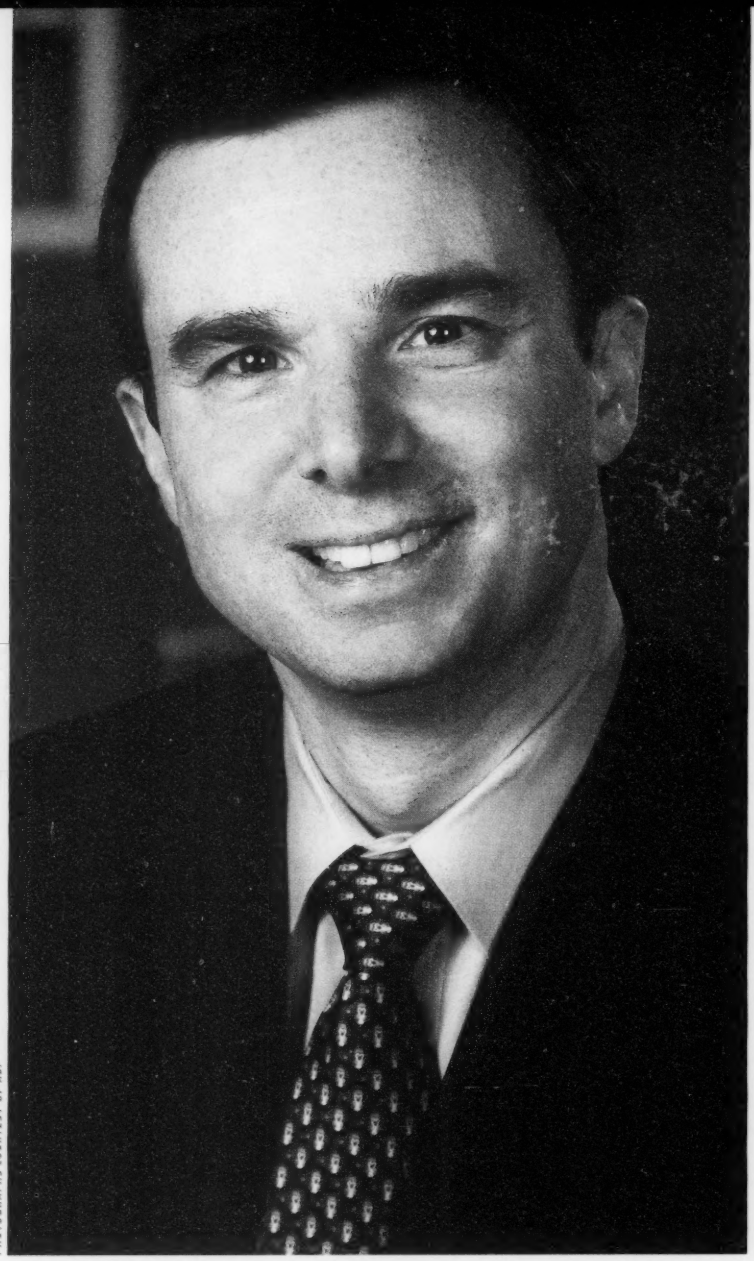
What's your favorite technology?
Groupon. They took all the things that are hot and made a business out of them.

Is there something that most people don't know about you?
My father was one of the first people to carry the title of CIO. He went to school for Cobol and worked his way up at JC Penney.

What's your favorite vice?
French food. They use a lot of butter.

What do you do during off-hours?
Travel. I love seeing the world.

What are you currently reading?
Super Sad True Love Story: A Novel, by Gary Shteyngart. It's a satire on where the world is going in terms of all this transparency and lack of privacy.



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AT BUSINESS-TO-BUSINESS *hosted services provider ADP, corporate vice president and CIO Mike Capone practices what he preaches. Not only does the company consume its own SaaS offerings, from payroll processing to talent management, but it also uses third-party services every chance it gets. Capone may have started out in IT, but he spent most of his 24 years at ADP on the business side before taking on the CIO role. Here he talks about how mobile, consumerization and big data are keeping pressure on IT, and why businesses must use technology to innovate, even when it voids existing business models.*

What career path did you take on your way to the CIO job? I went to a liberal arts college, and IT was a way to pay the bills right out of college. I quickly gravitated toward business, got an MBA, and left IT. I was general manager of our global outsourcing business. Then, three and a half years ago, our CTO said, "We're thinking of naming our first CIO in company history. We think you'd be a great candidate."

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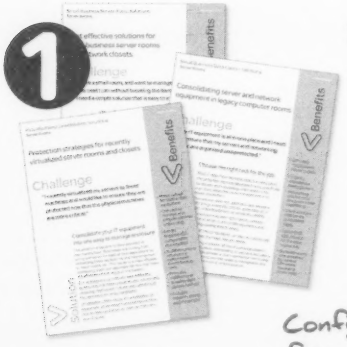

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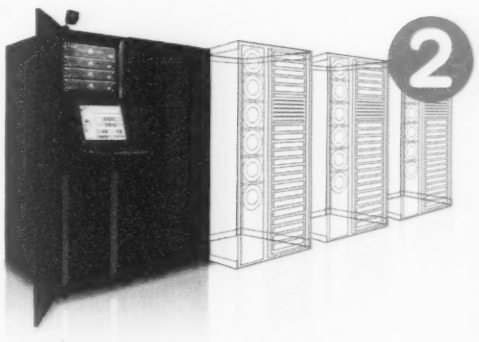

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Do you see your business background as an advantage in your role as CIO? It's been incredibly valuable not just in terms of how I think, how I run my organization and how I prioritize, but also in terms of the cred I have with my peers. They know I've walked in their shoes.

ADP was a pioneer of the software-as-a-service model. How has that business changed? The most fundamental shift I've seen is the consumerization phenomenon. For many years, our clients — the people who I support both internally and externally — were people who were paid to come in and use our systems. Sometimes those IT systems were fairly ugly, but it mattered less because people had to use them. Now many of the people we are dealing with are end users because we're doing more user self-service. So the mobile and social components of this have taken off. People expect an excellent experience with technology. That puts a lot of pressure on IT on the usability and innovation front. We have to make sure we're keeping up.

How does ADP's legacy as the granddaddy of SaaS affect how you do IT internally? We push out as much as we can to the cloud, including expense reporting, procurement and salesforce automation. Every conversation I have starts with, "Can we do this in a SaaS model?" It takes a lot of convincing for me to do something internally.

What aren't you willing to move to a SaaS provider? Back-office financial systems. We're waiting for that industry to mature. But I would not be surprised if in another year or two we're having a conversation about why that can't be pushed out into an on-demand model.

> **People expect an excellent experience with technology.** That puts a lot of pressure on IT on the usability and innovation front.

What other cloud services are you using? We've already built an internal cloud both for our clients and for all of the services we provide to our R&D organization and our business community. R&D people can provision their own servers. And even though we have two Tier 4 data centers, we still leverage infrastructure as a service. We use Amazon [EC2], for example, for some of our mobile development so that the ecosystem of partners we work with are in the cloud, not coming into our infrastructure.

What technology projects does your company plan to roll out in the next 12 months? We're going to roll out analytics to our clients. Not only will they get their data back and see some pretty cool visualization analytics, but they will be able to benchmark against other companies. Think of it as a kind of workforce index that an HR person can have on their desktop. So for example, you can see if you're below market for a given job code, and there will be a dashboard you can drill into to get additional benchmarks.

What is the key to keeping ahead with the technology? We preach that change is inevitable and we keep the pressure on all the time. When you're successful, the pressure is not there. But everyone remembers that IBM was the most profitable software company in the world and then two years later they were recording a loss. I also use the Kodak example all the time. We want to keep that in front of people and create a sense of urgency, even if our financial metrics don't show any urgency.

How has technology changed your business model? We're putting more and more stuff on mobile apps, which eats into other parts of our business because we don't charge for those apps. For example, we used to charge for delivery of pay slips and reports. Now it's all online. These are changes in the business model that we have to get used to.

What's your biggest pet peeve in this business? It's this whole concept that the cloud is something new. We've been doing this for a long time and this is just another way of transacting business. All of the hype is driving me up the wall, quite frankly.

What emerging technologies are you most excited about? The big data technology that's come out, the Hadoops of the world. That opens up opportunities in terms of our ability to provide analytics. We're capturing what people are doing on our websites, in our applications and mobile apps, and using that to predict what they're going to do next. We now have the ability to process and analyze all of that data so quickly and cheaply. This, I think, is going to be a big game-changer.

– *Interview by* **Robert L. Mitchell**

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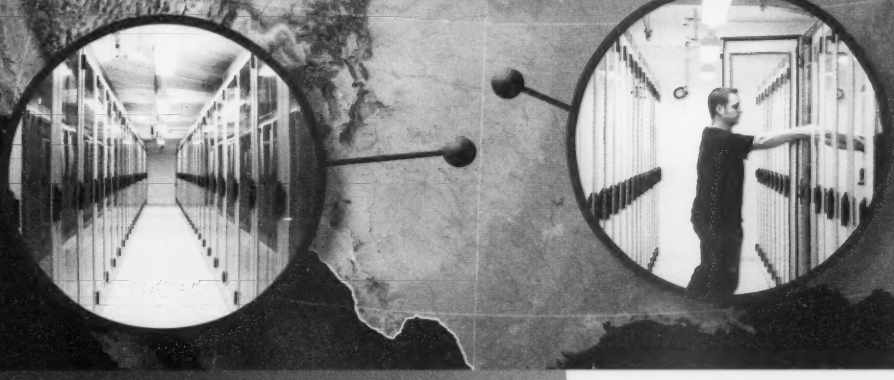

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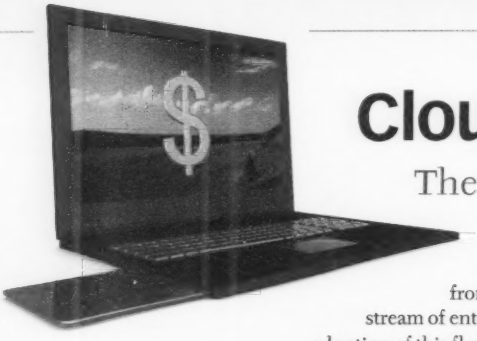

Cloud Computing

The Autonomics behind the Economics

In recent years, cloud computing has moved from the fringe to the mainstream of enterprise IT practice. The adoption of this flexible, service-based approach to computing has been catalyzed in large part by the promise of improvements in IT efficiency and reductions in data center expenses. But, too often, CIOs and financial managers fail to understand the critical role application servers play in realizing cloud computing's economic and operational potential.

The dynamic, virtualized and highly utilized infrastructure which is characteristic of the best cloud environments requires a foundation of powerful, intelligent, cost-effective servers. Ideally, these servers will automate many once-manual IT operations, driving significant improvements in total cost of ownership (TCO) and performance.

Intelligence and autonomics remove costs

Application servers that require laborious manual intervention for provisioning, health monitoring, firmware and software updating, and other routine tasks can seriously undermine the value of cloud computing. Whether the cloud environment is private, public, or a combination of the two, it can benefit not just from task automation but also from autonomics. "With autonomics, the server not only gathers information, but proactively does something with that information," explains Tim Golden, resident chief technology officer for Hewlett-Packard's (HP's) Americas Industry Standard Server Business.

Whether it involves "phoning home" to service professionals to alert them to potential component failures, or automatically identifying and correcting multi-bit memory errors, proactive autonomics can greatly lessen cloud TCO, improve performance, and maximize uptime. From an economic perspective, intelligent automated servers can drastically cut administrative and maintenance costs; reduce energy usage by ensuring servers run as efficiently as possible; and minimize the potentially astronomical costs of downtime by addressing problems before they result in catastrophic failures.

These and other TCO-reduction benefits are ultimately much more impactful to corporate bottom lines than are the relatively simplistic return-on-investment (ROI) analyses that traditionally have served as the primary economic evaluation factor for application servers.

Next-gen servers reduce costs

HP designed its latest generation of rack and blade servers –the HP ProLiant Gen8 portfolio—in large part to address the needs of virtualized cloud computing and other high-demand IT environments. The HP ProLiant Gen8 servers deliver more than 150 new features compared to earlier-generation servers, including many that leverage the servers' embedded intelligence, self-analysis, and proactive autonomics capabilities. Among the HP servers' TCO-reducing, performance-enhancing features:

- An embedded Active Health System that continuously tracks, logs and time stamps 1,600 system parameters and offers phone-home capabilities to both prevent failures and speed recovery times
- Monitoring for and, when possible, automatically correcting multi-bit memory errors on the fly without interrupting service
- Proactive identification of failing drives and automatic creation of a hot spare

Thanks to these (and dozens more) automation and efficiency capabilities, "the HP ProLiant Gen8 servers can be critical in helping CIOs achieve the optimal economic—as well as operational—benefits possible with cloud computing," says Golden. ■

> Ideally, these servers will automate many once-manual IT operations, leading to significant improvements in cloud computing TCO and performance.

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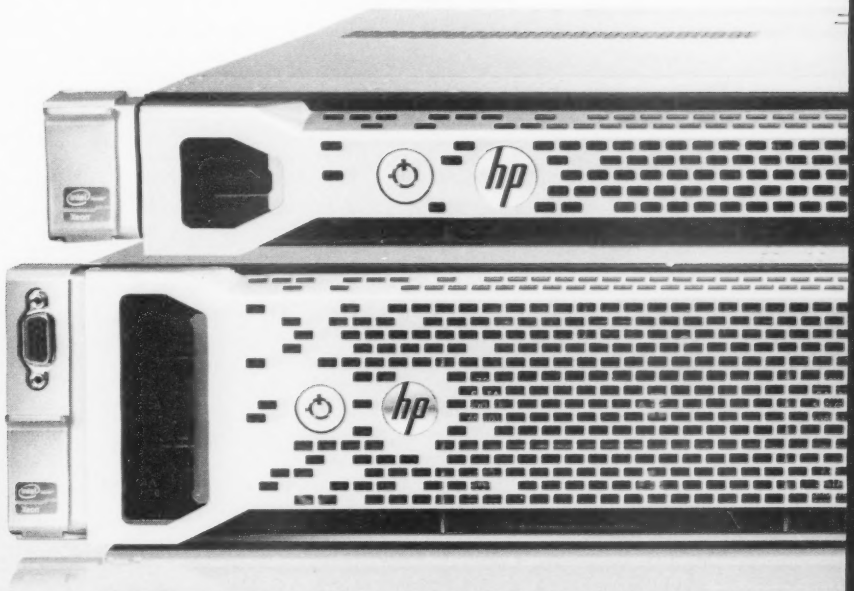

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PAUL GLEN

Assess Your Surroundings From 2,000 Feet Above

I'VE SPENT THE PAST TWO WEEKS flying my experimental two-seater across the country, landing at small airports, pitching my tent wherever I can, bouncing in the thermals, and mostly observing the world from a couple thousand feet up. From that vantage point, you can learn what a community values. The same is true, in a figurative sense, with organizations.

From that vantage point, you can learn what a community values.

What can you glean from a literal bird's-eye view? Consider the impression I got of Canadian, Texas, a small town near the Oklahoma border. When I looked down on the town from the air, it seemed like a family-oriented place, neither rich nor poor, since most of the housing consisted of single-family homes with small yards. It was easy to see that the town was suffering terribly from this summer's drought. Every yard was brown and dry, as was the terrain for at least 50 miles in every direction, with one small but significant exception: At the southern end of town, a brilliant green football field was surrounded by a bright orange running track and had the name of the team, Canadian Wildcats, emblazoned in the end zones. White bleachers lined both sides of the field, which sat next to a large parking lot. The field looked very much like an oasis.

True, you don't get a lot of detail when viewing it from 2,000 feet in the air; I couldn't tell whether the field had been watered, replaced with artificial turf or painted green. But it was clear nonetheless that the townsfolk of Canadian take a lot of pride in that patch of ground. It told me that for Canadians, football is more than a game, and that field is more than just a place for their kids to play. The Canadian Wildcats' field is a public forum where the community can come together, bond and express their pride.

All communities, even project teams and companies, make decisions about what's important to them, and those choices are often indelibly marked, visible to the observant — just as the things that are important to the residents of Canadian, Texas, were apparently visible to me from a couple thousand feet above.

Whether you're joining a technical team or working across the divide with nongeeks, the things you learn about what's important in your new environment can determine what sort of first impression you make and whether you will be embraced or rejected by your new colleagues. Violate unspoken rules of conduct, and you may be in for a rough ride.

For example, I was called in for a meeting with a potential consulting client. As I arrived, I noticed that the company had cubicles with low walls, cubicles with medium walls, cubicles with high walls, small offices with no windows, midsize offices with small windows, and large offices with big windows and meeting tables. Without exchanging a word with anyone at the company, I knew that this was a place that had a high regard for hierarchy. So I knew that I should focus my attention on the CIO rather than any of his lieutenants; they wouldn't be making any decisions and probably wouldn't voice any public opinions. I acted on that assumption in the meeting, and my suspicions were confirmed. In the end, the CIO hired me. I doubt that he would have if my behavior had not reflected recognition of the company's strict pecking order.

So when you engage with new people, pay attention not only to the tasks that you are asked to do, but also to the values of the group. A quick glance from 2,000 feet can tell you all you need to know. ◆

Paul Glen, CEO of Leading Geeks, is devoted to clarifying the murky world of human emotion for people who gravitate toward concrete thinking. His newest book is *8 Steps to Restoring Client Trust: A Professional's Guide to Managing Client Conflict*. You can contact him at info@leadinggeeks.com.

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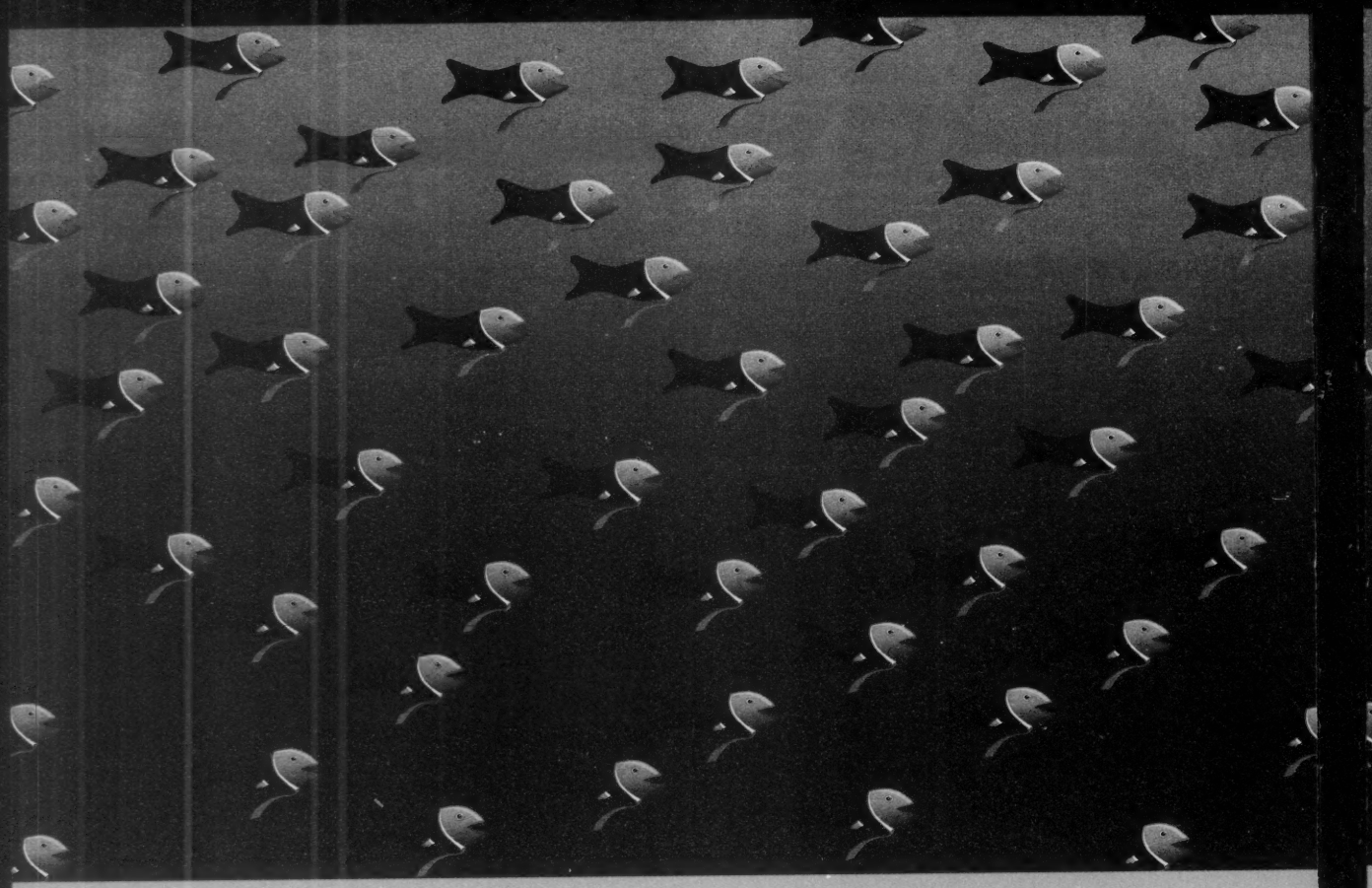

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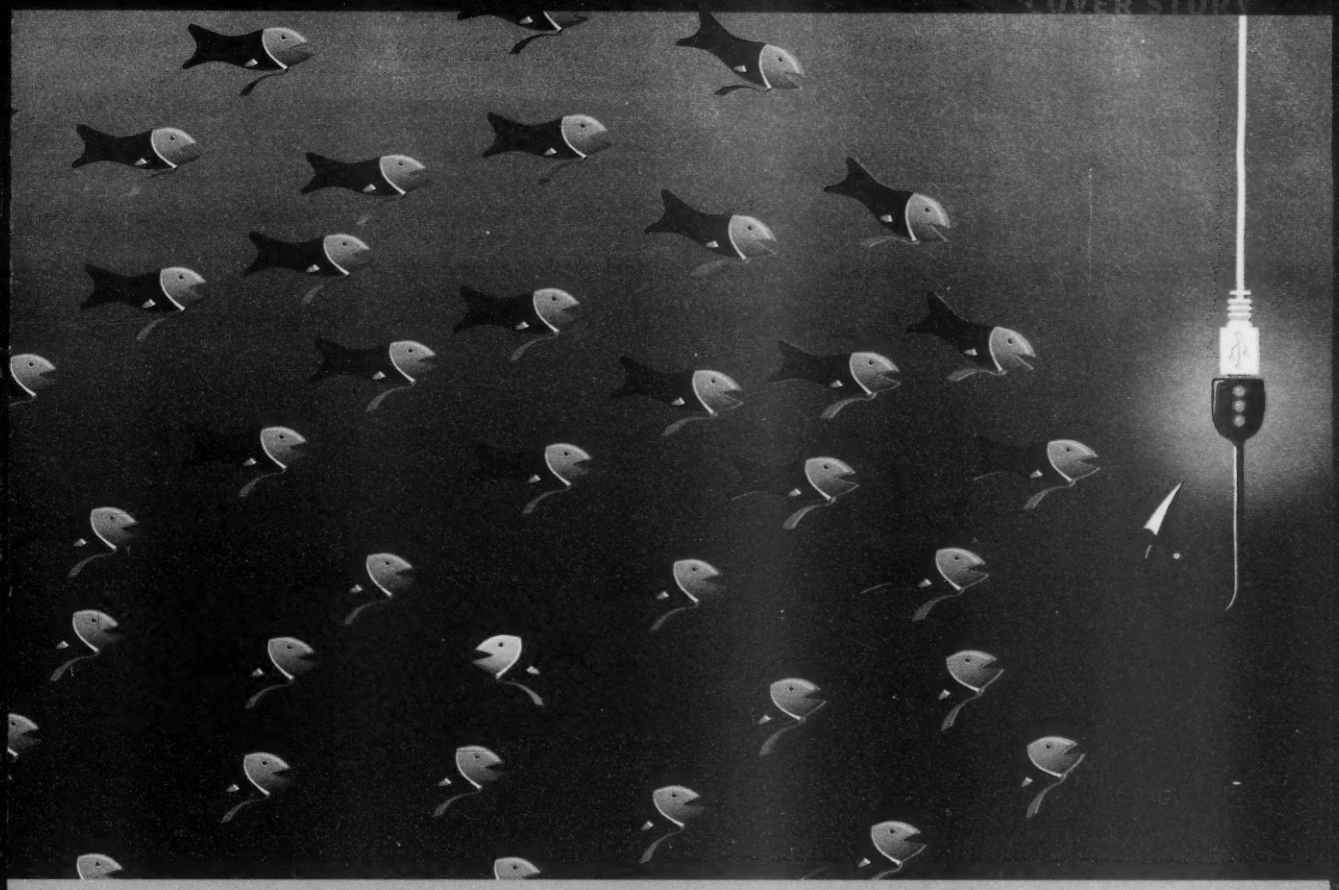


SOMETIMES **NOT ADOPTING A HOT NEW TECHNOLOGY** IS THE WISEST BUSINESS DECISION YOU CAN MAKE. **BY MINDA ZETLIN**

A FEW YEARS AGO, when Bill Weeks was CIO at a leasing company, a big vendor pitched some software intended to manage leasing throughout Europe. Weeks was skeptical. "We noticed that half the stuff they were showing us was PowerPoint slides and not actual functionality," he says. "We decided it wasn't strong enough to run a business on."

He and his team decided to pass.

It's the kind of decision that CIOs have to make all the time. With the pace of tech innovation growing ever faster, IT leaders find themselves under increasing pressure to make one difficult decision over and over: adopt a promising new technology and risk the unknowns that a new implementation brings, or decline — and risk letting their companies fall behind the technological curve. The wrong decision could destroy a career.

MICHAEL GLENWOOD ILLUSTRATION

Hype vs. Reality: How to Tell the Difference

THERE'S ONE THING everyone working in enterprise IT agrees about: Technology for its own sake is bad. Every new product you adopt has to bring a business value to your organization, either by reducing costs or otherwise improving the bottom line.

Sounds great, in principle. In practice, every technology vendor has a detailed explanation of how each of its products will help your company. It's up to you to figure out which ones really will. **Here are five questions that can help, courtesy of Rebecca Wettemann, vice president at Nucleus Research, which specializes in measuring the ROI of technology projects:**

1 **Can I find a role model?** "Look at other companies that are like yours and have implemented this technology," Wettemann advises. "Take the best data they have on the ROI they received. Use that estimate as a tool for making our own decisions."

2 **What are the top three benefits?** Some vendors claim that their products will benefit your business in 10 or 15 ways. While that may be true, "most ROI from new technology comes from only two or three benefits," Wettemann says. "So only look at the top three benefits, and try to quantify them in a meaningful way."

3 **How many steps to ROI?** If virtualization software lets you skip buying a new server, calculating the ROI is pretty straightforward. But when ROI doesn't come from direct savings or specific efficiency gains, it's harder to pin down. "An increase in brand value might increase the likelihood that new or existing customers will make purchases," Wettemann says. "The more steps I have to go through to get to dollars, the more indirect the value proposition."

4 **Am I buying it because of its category?** If you know you need a CRM solution, or you've been hearing the term "big data" and wanting to get in on it, you may be considering a product because of the category it falls into, not because of its actual capabilities. "We've seen it over and over again, with knowledge management, Web services, SOA and many other acronyms," Wettemann says. "People need to categorize something and make generalizations about it." Forget the category, she advises. "Instead, ask yourself: What is the specific business problem I'm trying to solve, and will this help me do it?"

5 **Will it pass the Mom Test?** "We call it the 'Mom Test,' " Wettemann says. "To be able to get employees to use a new technology effectively, they have to be able to understand it and what its benefits are. So if you couldn't explain it to your mom and have her make sense of it, you shouldn't be spending money on it."

— MINDA ZETLIN

Saying no will often leave a CIO wondering what might have been. But in the case of the leasing software, Weeks got a definite answer. Some time after taking a pass on the system, he took a job at a different company — one that had already implemented that software. Sure enough, "the vendor had oversold and underdelivered," he says. "It was supposed to work in all of Europe, but they had only completed the program for one country, and even with that one we needed manual workarounds."

Weeks spent the next five years working with the vendor as it gradually developed its product to the point that it offered the functionality originally promised. "Fortunately, the CEO had mandated that this be a fixed-bid contract," he recalls. "The contract said what the software was supposed to do, and we would have an annual conversation about how it wasn't quite there yet." Manual workarounds were put in place initially, and a triage approach was established with the vendor, so that the problems that were the biggest productivity drains would be fixed first. The other costs were people and travel. The business unit was headquartered near London, and most of the IT team was based in the U.S., so travel to the U.K. was required several times a year.

The original decision to forgo the leasing software "was one of those cases where you say, 'Wow, I made the right decision!' Although I wound up inheriting the problem anyway," says Weeks, who today is senior vice president and CIO at SquareTwo Financial, a Denver-based asset recovery and management company with annual revenue of about $227 million.

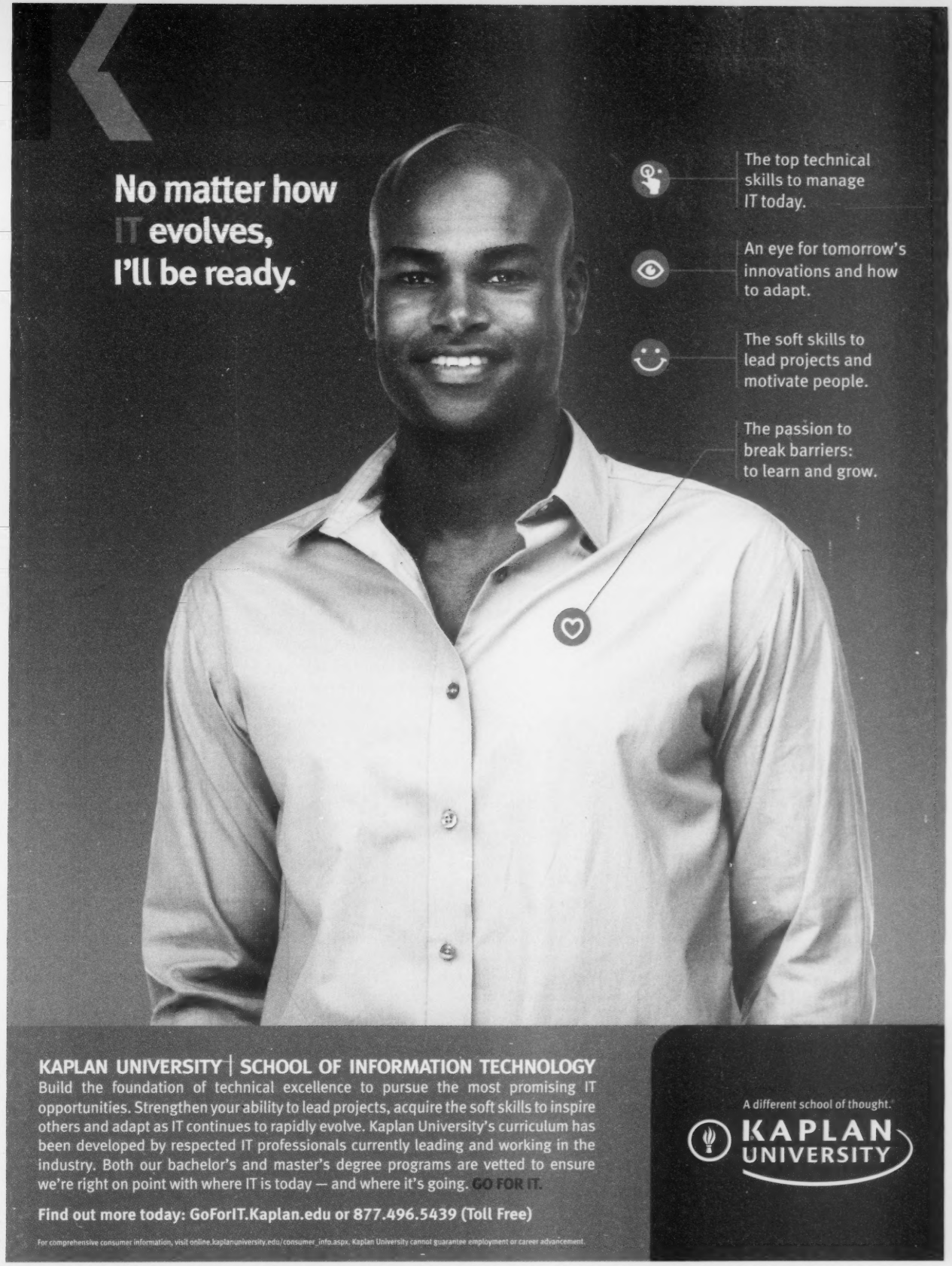
Unfortunately, it's rare that a new technology is as clearly not ready for prime time as the leasing software that Weeks encountered. Most products and services look good — on paper. And most come with clear case studies that show how they will help boost your company's ROI — again, on paper.

In the real world, those calculations can be tough to make (see "Hype vs. Reality," at left). Nevertheless, IT executives must decide every day whether to invest in a great-sounding new technology, or leave it alone. Sometimes, products that are well designed and work great — and might even create value for your company — are still not a good investment. Here are four good reasons to say "Thanks, but no thanks!" to an enticing new offering.

It's Too Early

"Timing matters," says Rob Meilen, vice president and CIO at Hunter Douglas North America. The Pearl River, N.Y.-based company, which makes window treatments, is part of the Hunter Douglas Group, headquartered in the Netherlands, with annual revenue of more than $2.4 billion and more than 17,000 employees worldwide. "You look at a product and say, 'Good idea, but not now,' " Meilen says. Though he does point out that "*no* may not be the same as *never*."

Before working at Hunter Douglas, Meilen was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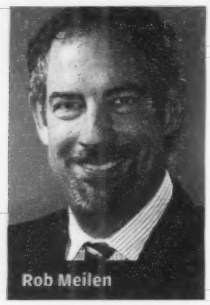

Rob Meilen

CIO at a national retail chain. In that position, he chose not to adopt an early version of Google Wallet. "The technology had some promise, but it wasn't well thought through," he says. "It would have worked well on the consumer's phone, but Google was unprepared for how it was going to connect back to my enterprise systems."

In addition, he noted, most smartphones at the time didn't contain the Near Field Communication, or NFC, chips required for Google Wallet to work. "I look back at that, and it was the right use of our resources at the time," he says. "That's not to say that same piece of technology wouldn't be a good fit somewhere down the road, as NFC chips in phones become more common."

In general, CIOs agree, it's probably best not to be a truly early adopter. "A lot of organizations I work with don't want to be on the bleeding edge," says Rachel Dines, an analyst at Forrester Research. "Before there are a lot of positive-use cases to review, there's no good scientific way to sort out the hype from the reality. So while there's a lot of benefit in that approach, there's a huge risk, too."

> **There aren't a lot of functions that own responsibility for taking risks, but IT and the CIO do.**
>
> ROB MEILEN, VICE PRESIDENT AND CIO, HUNTER DOUGLAS NORTH AMERICA

Kevin Roberts, CIO at Abilene Christian University in Texas, which has about 4,700 students, knows about early adoption risks firsthand. "We made a big run at document imaging," he says. "This was a long time ago, in the late 1990s. We had the whole paperless office mentality. We thought, 'We'll scan everything and sit at our computers and pull up whatever we need.' " The problem, he says, was tagging documents with metadata that would make them easy to find. "We spent a lot of money on this, and we had to walk away — we couldn't make it work," Roberts says. Today, he adds, the university has more-robust document scanning and tagging capabilities, so some of that dream of a paperless office is now coming true. But "13 years ago, it wasn't the right time," he says.

The Vendor Is Unproven

Many of today's most innovative new products are created by small, entrepreneurial companies. That's great news for the American spirit of innovation, but working with startups can make an enterprise CIO nervous. "In one case, we were going to be funding 100% of a company's payroll," Weeks recalls. "We had to wonder, 'Will they have other companies that use it, or are they going to go out of business as soon as we stop writing checks?' "

If that happened, the company might have been left with a great product, but no support or continued development. "There are ways around that. For instance, we could have said that as part of our agreement we could take over the source code if that happened," Weeks says. "But having developers work on someone else's code is very painful."

Weeks and his team decided to pass on the new product, and when they did, he recalls, "I remember the [vendor's] CEO saying, 'I'm going to call you once a week until you buy our product,' He only called for about three weeks." Sure enough, about a year and a half later, the vendor went out of business. "It was a company that wasn't solid from a financial perspective, even though they had a great product," Weeks says.

And even if the vendor offering a new product is on solid footing, switching away from a vendor you have a long-term relationship with can be risky. "You have to look at your partnerships," Weeks says. "Bringing in a new vendor will have a benefit in the short term. If you're looking at other products, your long-established vendors will be on their toes — they won't want you going to that product. But if you do it, will they be upset? If you were a high-profile client for them, you might not be as high-profile anymore. You might get less attention, less focus and less expertise. I'm not suggesting you should base your decision solely on that, but it's something to consider."

We're Not Ready

Sometimes, both a product and its vendor have proven track records. It might be clear that this would be a solid investment — but your organization might be unprepared to take advantage of it. Recently, Jason Cohen, CIO at New York-based Diversified Agency Services (DAS), considered a move to the public cloud. But he eventually decided that DAS — a holding company for more than 190 of the world's largest advertising agencies and communications firms — wasn't ready.

"Our companies all have different IT footprints and different processes and procedures, so we determined there was a significant risk in moving to the public cloud," Cohen notes. "We realized we aren't mature enough for the move, whether for storage or email. Instead, our determination was, 'Let's build the best technology we know how and aggregate our IT approach. And then we may be ready later on.' "

Before adopting a new technology, Meilen says, it's important to determine whether your IT organization can take on all the tasks that an implementation would require. "If it's a small or young [vendor], do I have the skills in my organization to engage with them?" he says. "There are capabilities a large, well-established

tech company would bring that a smaller startup won't. I'll have to supplement those. I'll be teaching a young company how to come to market in the enterprise space."

We Can't Handle It

Even if a technology is perfectly ready and could be perfectly useful for an organization, it may simply be something that IT can't take on. "I've been a CIO for 13 years, but in the recent past, it's become like the *I Love Lucy* episode in the candy factory," Roberts says. "There was a time when new technologies and new ways of doing things came along at an acceptable pace. I could take the time to make a thoughtful decision whether to invest in them. Now things are at such a rapid pace, I find myself making decisions not to invest in this, or to stop doing that."

Getting these calculations wrong can have dire consequences. "One company decided to make a $10 million investment in SAP over three years," Weeks recalls, of a former employer. "They were going to take it out of the operating budget, rather than finance it. The company was in a cyclical industry and the second year, it hit a recession. It wasn't going to make any money that year. They fired the CIO, saying, 'It was a bad decision to start this project when you did.' "

This happened not with an unproven newfangled idea, but with a solid technology that would unquestionably have created benefits. "If they'd been more conservative in their approach, perhaps implementing it in stages, that project would have been a lot more successful," Weeks says.

And When to Say Yes

There are many excellent reasons to say no, but doing so too often can hurt you. If you wait too long on a new technology, you might lose competitive advantage or spend too much on old systems. For example, Cohen acknowledges that "we may have waited a bit too long on virtualized storage and wound up investing a little more in hardware than we needed to."

The risks can escalate the longer you wait. "I see a lot of companies that are still highly mainframe-based because they've never gotten away from their core software," Weeks says. "The problem now is finding people to support that environment. I don't think there are a lot of people coming out of college saying, 'I want to support mainframes!' "

Bill Weeks

"Someone early in my career said to me that part of the role of the CIO is knowing which frogs to kiss," Meilen says. "You have to try out some new things. But if you're not clever about which ones, you're going to waste a lot of time and not get much from it. It can't be chosen at random. It's an important element of what we do that we will take some risks on new technology. That's part of our responsibility within the enterprise. There aren't a lot of functions that own responsibility for taking risks, but IT and the CIO do."

And so, he says, it's imperative to keep trying new things, even if some of them wind up as failures. "By playing it very safe, you're not serving your enterprise as fully as you could be or should be." ◆

Zetlin *is a technology writer and co-author of* The Geek Gap: Why Business and Technology Professionals Don't Understand Each Other and Why They Need Each Other to Survive. *Contact her at minda@geekgap.com.*

'Hey, I Was Reading An Article...'

THOSE SIX WORDS strike fear into the heart of many CIOs. It happens like this: The CEO or CFO reads an article about an interesting new technology and directs you to implement it – without knowing any of the details. What do you do if you know it's not a good fit?

"CIOs struggle with communicating both upward and downward," says Jason Cohen, CIO at Diversified Agency Services. "Some CIOs I talk to tell me, 'The CEO dropped it in my lap and I have to do it.' I say you aren't doing your organization or your CEO justice unless you fully explain the pros and cons."

The secret is to carve out pieces of information the CEO can understand. Cohen says he'd approach it this way: "I might say, 'I read that article, too – about transferring files through the cloud. But did you know the average file size for an advertising agency is much larger than for a manufacturing company because of the large graphics? That's why that doesn't work for us.' "

Bring-your-own-device mandates can be particularly challenging. "Executives always ask, 'Can I use my iPad?' " says Pete Lee, engagement manager at SWC Technology Partners, which provides IT services to midsize businesses.

BYOD programs offer many advantages. "But they can kill IT staff, because they have to manage so many different things," he says. "If you implement BYOD, there will be more cost for managing those devices and more licensing costs."

The best approach is to make sure upper execs understand those costs. "Every executive responds to ROI," he says. "If you can compare the return on investment with what it will cost to implement BYOD, they can make the right decision."

Knowing that an article that a CEO has read could land on your desk at any moment should serve as a motivator to stay informed yourself. "The best approach is to stay ahead of it," says Rachel Dines, an analyst at Forrester Research. "You need to be reading the same magazines, so when the CEO drops an article on your desk and wants to implement this whiz-bang thing, you'll already have looked into it and talked it out with your reports. You'll be ready to say, 'Yes, we've been thinking about suggesting this,' or 'No, we can't, and here's why not.' The worst thing is to be blindsided."

And, she says, make sure you're not doing the same thing to your own IT organization. Make sure you get buy-in from every segment of IT before committing to a project. "When I see an implementation go wrong, it's usually because someone from above mandated it," she says. "I see that more than you might imagine. Something is brought in all of a sudden, and the infrastructure folks are saying, 'I wish someone had asked me because this doesn't jibe well with the technology we have.' "

– MINDA ZETLIN

The Science *of* Customer Loyalty

Guesswork no longer cuts it for companies trying to secure customer loyalty. *Read how three businesses use analytics software to understand, respond to and even predict buyer behavior.* **BY MARY BRANDEL**

IN TODAY'S INTENSELY COMPETITIVE and fast-changing marketplace, companies can no longer rely on gut instinct, guesswork or "business as usual." Across all industries, businesses are turning to data analytics to quickly and accurately respond to and even predict buyer behavior in their quest to grow revenue while securing customer loyalty.

The desire to engage with customers more effectively is fueled in part by what many see as a shift in power from sellers to buyers, thanks to social media and the rise of mobile computing. In IBM's most recent Global CEO Study, in fact, more than 70% of CEOs said they were seeking a better understanding of individual customer needs and improved responsiveness to those desires. And according to IDC research, the global market for business analytics software grew 14% in 2011, compared with 11.6% the year before, and is slated for 9.8% compound annual growth between now and 2016.

Here is a look at two companies that are striving to capture the loyalty of their customers through the use of analytics.

ANT236 / FOTOLIA

T-Mobile: Combatting Customer Churn

For wireless providers, customer churn can be a killer. According to research from Strategy Analytics, at the end of 2011, the percentage of mobile customers who switch service providers every year reached 44%, its highest level ever.

T-Mobile is one carrier that has been feeling that pain. Dwarfed by AT&T and Verizon Wireless in market share, the company was losing one customer for every customer it gained in early 2012, according to a statement by former CEO Philipp Humm earlier this year. To offset that trend, T-Mobile is digging into its customer data to better understand buyer behavior and more precisely target customer needs.

"Customers have so many dynamic options right now," says Alison Bessho, director of IT enterprise systems at T-Mobile. "They can easily get intrigued by something new with a different company, so in order to keep them happy, we're always looking for creative ways to give them something new and different."

To that end, T-Mobile uses a Teradata database and analysis tools from SAS to collect and analyze customer data, including current plan rates, the number of family plans versus individual plans, credit ratings, network usage metrics and statistics comparing the amount of talking time and the amount of texting time. It then segments the customer base, builds focused campaigns for different customer profiles and presents offerings via its various sales channels, including stores, call centers and websites.

The marketing team then analyzes how customers respond to these campaigns to project financial returns and fine-tune the offers. To do that, it feeds data into the Hana real-time data analytics appliance from SAP, which uses in-memory computing to perform rapid analytics on large data sets. This allows statistics modelers and business analysts to query the data and — if they find something unexpected — query further, without involving IT.

> **[Analysts] want to drill down into the data in ways they never anticipated.** *So it's important that the tool is responsive and cuts through rows of data quickly.*
>
> **ALISON BESSHO,** DIRECTOR, IT ENTERPRISE SYSTEMS, T-MOBILE

"You don't have to pre-think what types of analytics you're going to do or pre-build the aggregation tables that you build with traditional BI solutions," Bessho says. Plus, the data can be loaded more quickly into the appliance than it can with traditional analytics platforms, and the queries run 55 times faster than with a traditional database. That speed encourages analysts to explore creatively, she says.

"A lot of the benefit is finding the unknown," Bessho says. "They get a surprising result, and they want to drill down into the data in ways they never anticipated. So it's important that the tool is responsive and cuts through rows of data quickly."

Analysts can now determine the types of campaigns that work best for various customer groups. "We now know how to go to different customers with [different] offers," Bessho says. For instance, one way to segment customers is by how close they are to the end of their contracts. Knowing this — as well as what type of plans they have, what their credit scores are, and where they live — T-Mobile can, for example, send phone upgrade offers to long-term customers and offers for different rate plans to newer ones.

These offers can go out via text message, email, the call center or physical stores. "When the customer is on the phone or walks in the store, we get more fresh data about them to help reps select the best offer at that specific time," Bessho says. "We can take advantage of historical data, as well as dynamic data, to create personalized, focused offers based on customer trends and behaviors."

T-Mobile also uses tools from Business Objects to produce dashboards and detailed operational reports for marketing leaders. It will soon launch a mobile business-intelligence capability so marketing execs can view the current performance of marketing campaigns on their tablets.

T-Mobile still faces challenges, including the need to recover from its failed buyout deal with AT&T and the June departure of its CEO. But the company is betting on customer insights to bolster its future prospects. It plans to add 300 more customer data attributes to the system to deepen and broaden its analytic capabilities, and it will add input from social media as well. In the first quarter of 2012, T-Mobile saw 187,000 net customer additions, compared with 99,000 net customer losses in the first quarter of 2011. "Our goal is to reduce churn, enhance loyalty, upsell and cross-sell new devices and rate plans, and make customers happier, while achieving better financial results," Bessho says.

SuperValu: A New Approach to Loyalty

For grocers, the concept of "loyalty" has historically been tied to the "loyalty card" — those ubiquitous laminated cards that give shoppers automatic discounts. But market forces are driving grocers like SuperValu to kick their customer loyalty games up a notch. According to Wesley Story, group vice president of consumer insights and loyalty at SuperValu, competition is heating up, especially as more types of retailers — from big-box stores to discounters — add grocery items to their shelves. About two years ago, SuperValu launched an effort to become more customer-centric by creating a hassle-free shopping environment, offering more freshly prepared foods and matching product lineups to local tastes.

Customer data gathered from loyalty cards is key to this strategy, Story says, because it reveals buying trends and demographic shifts. "If you're not careful, all of a sudden the customer that was your target no longer lives around you," he says.

According to a study by RIS News and IDC Retail Insights, localizing merchandise and personalizing interactions has pushed business intelligence and analytics — in particular, in-memory, data appliance and grid computing capabilities — to the top of the priority list for grocers concerned about customer loyalty.

SuperValu has long used a Teradata data warehouse and traditional BI tools to analyze transaction and customer data. But it recently set up a big data analytics lab to accommodate faster, more complex, ad hoc queries against all types of data, including unstructured data from social media. The lab's tools include Teradata's Aster appliance, which collects data from operational systems and puts it in a nonproduction database optimized for analysis; Hadoop, an open-source analytics platform that uses

OBERWEIS DAIRY: Seeing Through the *Customer's* Eyes

GUT-FEEL DECISIONS are no longer enough for businesses today, even for a nearly 100-year-old, family-owned company like Oberweis Dairy. Based in North Aurora, Ill., Oberweis operates more than 40 ice cream/dairy stores, a wholesale distribution business and a home delivery business. In 2010, when the company needed to make some changes, it invested in a system from SAS to make sure its efforts would pay off.

So far, the system has helped Oberweis improve customer retention in its home delivery business and increase store profitability and service times, according to Bruce Bedford, vice president of marketing. "We're blessed with tremendous customers who are brand-loyal, but it's also because we maintain an emphasis on the highest-quality foods, listen to their needs and respond quickly," he says. "In that effort, analytics tools have been tremendous."

Oberweis turned to analytics when it discovered a customer attrition problem in its home delivery business. The company reaches out to customers through direct mail, door-to-door visits and the Internet. Bedford says that many customers who signed up for home delivery in response to direct mail campaigns and door-to-door visits canceled the service after 180 days, but that was not the case for those who responded to Internet campaigns. The Internet was the only channel through which the company did not offer a $100 discount in the form of free deliveries for six months. The marketing team hypothesized that attrition rates spiked at 180 days because the value of the free-delivery offer had been depleted at that point.

To counter this trend, Oberweis devised a new promotion that offered identical savings of $100 but through a yearlong reduced charge of 99 cents per delivery. After determining that the response rates for the two offers were the same, the company tested their respective effects on customer loyalty. The results were dramatic: Among customers who responded to the 99-cent offer, there was a 35% improvement in the retention rate at the nine-month mark, "which is worth millions of dollars in incremental revenue gain," Bedford says.

Analytics also enabled Oberweis to speed service in its stores. "Customers were getting up to the cashier and not knowing what they wanted to order," Bedford says. The culprit, the marketing team determined, was the menu board. "We never designed it with the intention of getting people through the line efficiently," he says.

So last fall, the marketing team came up with four designs that led customers through the decisions of ice cream serving size, flavor and cone type, and featured images of six popular sundaes. The designs also highlighted products with high profit margins. "We didn't want to guide someone toward a simple sundae or traditional ice cream cone instead of our waffle cone, which is an upsell," Bedford says.

Using SAS modeling, the company tested the designs in several stores. When the best one was rolled out, Oberweis saw an average profit increase of 3% on fountain purchases and an estimated 30% improvement in service time during peak hours. "It's good for the customer because it's an uncomplicated and quick experience, and we've been able to drive incremental profitability," Bedford says.

Through predictive analytics, Oberweis has also determined that store customers who intend to purchase just a bottle of milk are most receptive to offers of discounted quarts of ice cream. "Before, we had no idea that would be beneficial to do, but we saw a dramatic increase in quarts of ice cream sold when store staff was trained to offer a dollar discount," Bedford says. "The story was lying there in the data, and by combing through it with the right tools, we could draw it out."

— MARY BRANDEL

parallel processing to quickly analyze large data volumes; and a visualization tool from Tableau Software designed to rapidly deploy dashboards that mash up various types of data, including information from external sources.

With this setup, SuperValu no longer needs to know how data will be structured or what questions it needs to ask. "If a query doesn't work, we can just throw it away because the investment is minimal versus weeks and months of development," Story says.

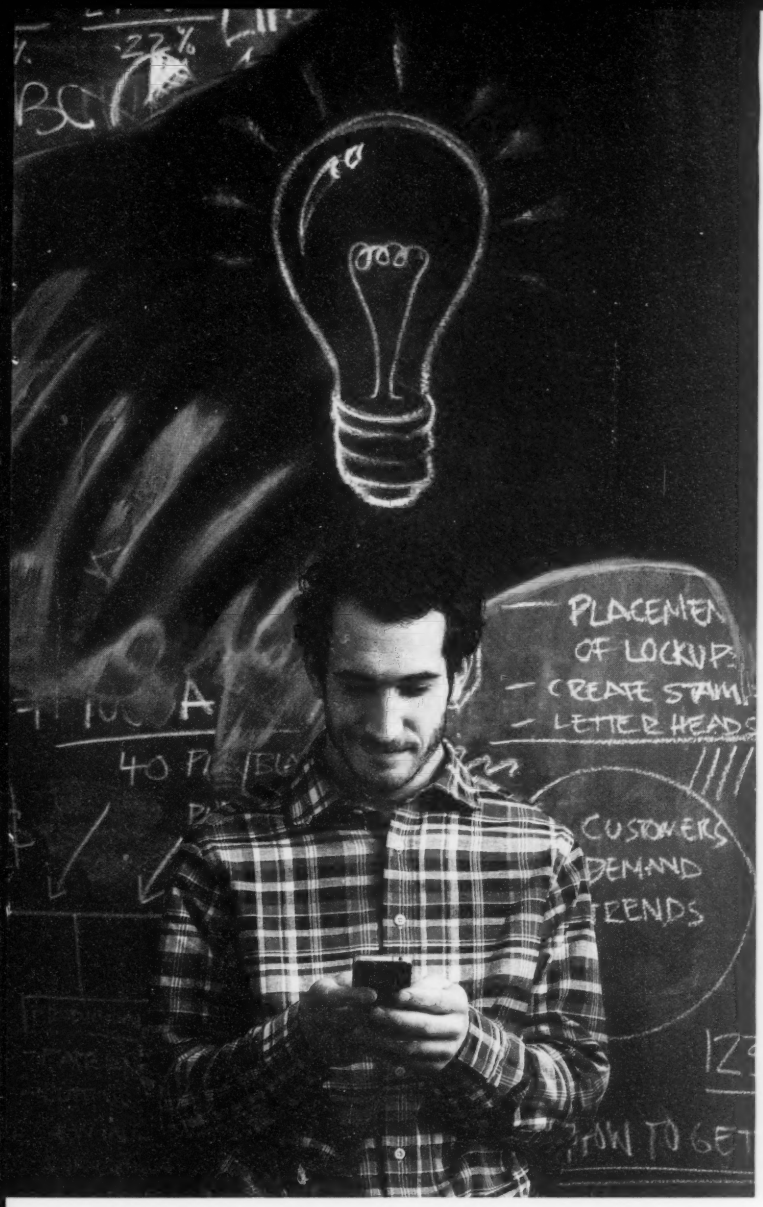
The grocer is already better able to keep popular items in stock by studying out-of-stock data from its inventory management system, peak shopping times from its transaction data, staffing levels from the labor management system and customer perceptions from its "voice of the customer" system. It has determined that certain stores needed to add a midday restocking shift to accommodate the rush of traffic between 4 p.m. and 6 p.m. "Some of this is Retail 101. But before, we didn't know exactly what the staffing levels needed to be at what stores or what the customer perception levels were," Story says.

Analytics also enables SuperValu to engage with customers through the most effective medium, be it email, text messaging, mobile apps or social media, Story says. The old-school approach was to ask customers which channel they prefer; however, it's far more accurate to watch their behavior, he says. So, for a highly digital customer, you increase activity where they respond the most — maybe text and social media — and drop it in the media where they're less active, like email and snail mail.

Predictive analytics is the next step, Story explains. The grocer is experimenting with segmenting customers and predicting their behavior by overlaying loyalty-card data with demographic, psychographic, behavioral and economic information from external providers. By seeing, for instance, the effects of the recession on shopping patterns, SuperValu can better predict which customers will switch to lower-priced items during a downturn and proactively market store brands to them. The company is also reaching out to digitally savvy consumers via mobile apps and social media.

"That's the secret sauce," Story says. "Bringing it all together to understand what the redemptions are, how we offered them, through which vehicle, where they [were] redeemed, which [channels] customers are most active in — and their social media influence if they are a highly connected consumer." ◆

Brandel *is a* Computerworld *contributing writer. You can contact her at marybrandel@verizon.net.*



JUSTIN LEWIS / GETTY IMAGES

WHAT YOUR Interns CAN *teach* YOU

Interns aren't just for grunt work anymore. ***When properly managed,*** they can bring new insight to IT problems and processes. **BY TAM HARBERT**

IT'S SUMMERTIME, which means legions of eager, fresh-faced interns are ensconced in IT departments across the country, hoping to get real-world experience, or at least something that will look impressive on their résumés.

Some will have less-than-ideal experiences. Rather than coding or developing apps, they may spend the summer filing or wiping hard drives destined for recycling.

Alex Kern, an 18-year-old from Santa Monica, Calif., is decidedly not in that camp. He spent last summer helping a team at the Jet Propulsion Laboratory (JPL) in Pasadena, Calif., develop software that NASA will soon use to store data in the public cloud. And Kern's name is on the patent application.

"My internship was hands-on — creating stuff and helping JPL achieve its goals," says Kern, who graduated from high school in May and will start his undergraduate studies at the University of California, Berkeley, this fall. "Most of my friends were just thrown into internships, usually just following someone around and doing lots of busywork."

As Kern's experience implies, employers that give IT interns more opportunities stand to gain much more in return. Interns can bring valuable insights and new skills to their employers.

"They bring in a fresh perspective, and they are far more current on new technologies, such as social networking," says Suzanne Fairlie, president of ProSearch, an executive search firm that focuses on IT and finance. "It's part of their DNA."

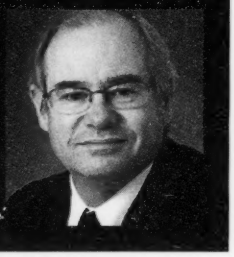
But in order for organizations to reap those gains, Fairlie stresses that internships require planning, and the interns themselves need personal attention. "When [internships] work well, it's because someone internally in the company is identified to take that intern or group of interns under their wing," she says.

Rather than just using interns as cheap (or free) summer help, organizations must treat internships strategically if they want to gain true insight from them. They should plan and structure the intern experience, take care to match interns' interests and experience with suitable projects within the company, listen to what interns have to say and — most importantly — give interns room to run.

"The key to all of this is to give the students something meaningful to do, something that actually gets

The key to all of this **is to give the students something meaningful to do, something that actually gets used or at least tried. Something that's not a make-work project.**

TOM SODERSTROM, CTO, JET PROPULSION LABORATORY



used or at least tried," says Tom Soderstrom, CTO at JPL. "Something that's not a make-work project."

Computerworld gleaned details from three organizations doing just that, and reaping the rewards season after season: JPL, the White House's Executive Office of the President and utility company We Energies. In each case, the employer invested time and personnel, in both planning the internships and in working with the interns themselves. And in each instance, the organization was rewarded with innovative ideas, increased efficiency and, sometimes, talented full-time employees.

Here's a look at how JPL and some other employers have turned their interns into assets.

JET PROPULSION LAB

- **Lesson learned:** *Challenge interns, but keep requirements loose enough to encourage innovation.*
- **Value gained:** *Patent applied for; intern-developed software in process of being deployed.*

JPL is a poster child for great internships. That's probably not surprising, as education is one of the missions of this federally funded research lab that's managed by the California Institute of Technology. It has 30 programs and brings in some 500 students (from both college and high school) during a typical summer, according to Paula Caterina, group supervisor of university recruiting in human resources at JPL.

What may be surprising to some is the extent to which interns are allowed to not only stretch their intellectual wings, but also work on real projects that are used in real NASA missions.

The emphasis on internships comes from the very top. JPL Director Charles Elachi started as a graduate student summer intern more than 35 years ago. "He's always stressing that we need to capture the imagination of the students and JPL as an innovative, fun, exciting place that's always coming up with new research," says Soderstrom.

Indeed, on the JPL website, Elachi says interns are the future of JPL. "I consider student employees to be among the lab's most important and valued staff members," he says. "They are often the source of many new ideas because nothing seems impossible to them, and that's right in line with our line of work. We are in the business of making the impossible possible."

Both Kern and a fellow intern — 18-year-old Andres Riofrio, who had just completed his freshman year at UC Santa Barbara — so impressed their JPL mentors with their research that they were asked to give a talk on cloud computing to the entire lab. "Both Alex and Andres were doing things that are significantly more advanced than what a lot of the rest of the people in the lab were doing," says Khawaja S. Shams, lead cloud architect at JPL.

That's what happens when you give interns room to run, says Shams. "Very often, students surprise us and come up with a better solution than what we had originally thought," he says. In the case of the cloud software that Kern worked on, the idea was so good that JPL has applied for a patent and is in the process of integrating the software into a cloud-based data backup pipeline for future NASA missions.

EXECUTIVE OFFICE OF THE PRESIDENT

- **Lesson learned:** *The best results come from projects with contained scope.*
- **Value gained:** *Improved efficiency and effectiveness of everyday office tasks that formerly frustrated rank-and-file employees.*

On the other side of the country, interns are making a difference in the halls of government, including the White House's Executive Office of the President. In fact, because one CIO took the time to listen to an intern, the White House has launched a new IT-focused internship program.

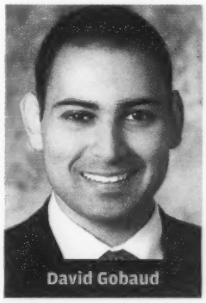
Early in 2011, David Gobaud approached Brook Colangelo, CIO of the Executive Office of the President, with a proposition. Gobaud, 28, a Stanford University computer science graduate, had a White House internship unrelated to IT — he was conducting fact-checking and research for the Council of Economic Advisors.

As part of that work, Gobaud had noticed some business process inefficiencies and started, on his own, to automate some of them for employees. For example, he noticed that staffers were manually updating spreadsheets weekly. They would copy and paste data from one spreadsheet to a master spreadsheet, extending rows and manually updating charts — a time-consuming and error-prone process.

"I created a macro that turned this into a single workflow," says Gobaud. "Click a button, select the new data file and click OK."

Gobaud talked with his supervisor and then proposed to Colangelo the idea of creating a team of IT interns who could identify more areas where such small-scale automation could improve efficiency throughout the White House. Colangelo liked the idea. He named it the Software Automation and Technology (SWAT) team and asked Gobaud to help manage it. They selected four interns for the first session, which was last summer.

The SWAT team worked with Colangelo's enterprise business solutions staff, which focuses on application development and solving business problems. The interaction with real business users was a valuable experience for the interns. "We would watch people perform various tasks and listen to what frustrated them, what was consuming their time," says Gobaud.


David Gobaud

Users may have one solution in mind while being unaware of other technologies or techniques that can help, says Colangelo. For example, they may not know that macro templates can make publishing memos quicker and easier. "Our job as technologists sometimes is to say to people, 'I hear what you are asking for, but have you thought about X, Y or Z to solve the problem instead?' "

The team first gained an understanding of the customers' objectives and needs, says Gobaud, and then proposed a way to improve the process and, with customer approval, started developing. "We used an agile development process and worked to get a beta version to the customer ASAP," he says. "We would then iterate and continue development while getting feedback from the users."

The program has been expanded to seven interns this summer, and Colangelo thinks that it just might inspire some IT students to go into government.

Already, it has reinforced Gobaud's goals. "I saw the amazing ability that technology has to revolutionize internal government operations and create a lean, effective federal government," he says. "Working at the White House cemented my career goal of becoming a government technology leader."

WE ENERGIES

- **Lesson learned:** *Put some teeth in your internship program by asking managers to justify student positions, not merely fill them.*
- **Value gained:** *New hires already steeped in company culture and corporate values.*

In years past, We Energies, a utility company that provides electricity to parts of Wisconsin and Michigan, hadn't put much effort into its summer opportunities for students, typically starting the process too late to recruit the best candidates.

Recognizing that both the company and the students could be getting more out of the partnerships, We Energies revamped its program a couple of years ago to make a distinction between IT interns and student summer workers, according to John Brewer, service desk manager at the company. "We wanted to turn [internships] into a program rather than just a summer hiring exercise," he says.

The company now has a formal IT internship program that runs for two summers, with three to four students joining the program each year. Meanwhile, it continues to hire other students to work in less specialized summer jobs. The new program gives interns an opportunity to shine and gives the company an opportunity to hire top performers.

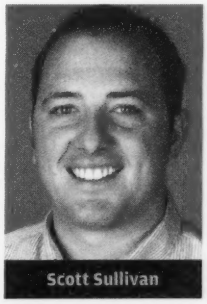
One change involved asking IT managers to give a business justification for hiring interns. Rather than just hearing that the managers hope to bring in students, "we want to hear what they plan to do with them," Brewer says. "We want to make sure that it isn't just grunt work." This approach not only makes better use of interns, but also ensures that they are matched with projects that suit their skills and aptitudes.

The company also extended the program over two summers, giving interns more opportunity to work in different parts of IT and also giving the company a longer window for evaluating their potential.

"Since December of 2011, five interns have graduated from school; all five have been offered permanent positions, and all five have accepted those positions within our IT department," says Brewer.

One such intern was Scott Sullivan, now 24 and an associate IT application consultant for We Energies.

"Through my internship, I was able to apply my appreciation and passion for IT to initiatives that support critical processes and functions," recalls Sullivan, who spent one year in the old summer worker program and one semester as a new IT intern. "I was given the opportunity to join the application support team and participate in an ongoing companywide software upgrade."


Scott Sullivan

"They haven't seen any limits yet," says JPL's Soderstrom. "What we have to do as managers is to harness and support that energy, and of course, when they break a few eggs, help them clean it up." ◆

Harbert *is a Washington, D.C.-based writer specializing in technology, business and public policy and a frequent* Computerworld *contributor.*

Security Manager's Journal

MATHIAS THURMAN

Ask, and Hope to Receive

Our manager has a long wish list as the annual budget time rolls around once again.

IT'S BUDGET TIME AGAIN, which is a good chance to assess our information security defenses and decide which areas we can best afford to beef up. Here's a look at what I think we'll be able to add this year.

First, I want to increase our investment in security incident and event management. SIEM has been a great investment thus far, helping us thwart attacks and identify other malicious activity that could have resulted in the loss of sensitive data, unauthorized access or a denial-of-service attack on our network. I can point to a lot of things that justify further investment. My plan is to expand our license and add more network sensors to remote offices. The return on those investments will be that more data will be correlated with additional log and netflow feeds from network and server resources.

Next, I want to upgrade the security assessment tools that automatically scan our DMZ infrastructure on a weekly basis, as well as satisfy our regular audit and assessment schedule of internal apps and infrastructure. Our current tools, though fairly effective, lack some of the rich functionality that Qualys, nCircle and Rapid 7 offer. Any of those would give us a more robust, centralized management console, integration with other tools and better reporting options. The productivity gains that these products would make possible are a selling point; the tool we end up choosing should pay for itself in short order just in the area of collecting security compliance data each quarter.

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Then there's data leak prevention (DLP). When we implemented DLP earlier this year, our budget didn't allow for any decryption infrastructure. A main feature of DLP is that it can detect documents being sent via Web-based apps such as webmail and personal storage sites, but we need to decrypt the SSL traffic before our DLP tool can inspect the data. In addition, we recently migrated our Exchange deployment to Microsoft's Office 365 cloud offering, so now even our corporate email is encrypted. All of that means we need to buy proxy appliances and then send all our Web traffic to them for decrypting ahead of going to the DLP engine for inspection. We'll be looking at either Cisco or Bluecoat to satisfy this need.

Another area that we need to address is protection against advanced persistent and zero-day threats. We're on schedule with a proof-of-concept of FireEye, as we seek to understand the value of this type of investment. If the pilot is successful, our plan is to buy a few appliances for our larger offices, but complete enterprise coverage would require an appliance at each of our more than 40 remote offices. If FireEye doesn't fit the bill, we'll look at other technologies, including WildFire, which is already bundled with our Palo Alto Network Firewalls.

Each quarter, I spend about $30,000 for outside firms to conduct penetration testing and give us an independent viewpoint. One recent penetration test of our IP telephony infrastructure identified several critical configuration issues. I would like to double that budget line in 2013, mostly because we are expanding our use of cloud technologies and will need more assessments to keep up.

As for staff, I'll have a harder time. I'm fortunate in being allowed to fill an open position for a security analyst, but I could always use more people. The good news there is that my company just announced a summer internship program. At nominal cost, I can hire a college intern for the summer. I'll be asking for two.

All in all, I know I'm pretty lucky. Not every security manager can ask for so much and have a reasonable expectation of getting it. Still, our security spending remains small, both as a percentage of the overall IT budget and in terms of security spending per employee. ◆

This week's journal is written by a real security manager, ***"Mathias Thurman,"*** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

"I know I'm pretty lucky. Not every security manager can ask for so much and hope to get it.

Trouble Ticket

» **At issue:** It's time to make the case for funding in the 2013 budget.

» **Action plan:** Prioritize the company's security needs, and have justifications at the ready.

They do

the central bank of an island kingdom
the inventor of the spark plug
the original maker of Aspirin®
a home shopping channel watched 'round the world
a telecom dressed in pink
a financial institution with passion for performance
a four letter group of chemical companies
an aircraft engine manufacturer gone automaker

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S.J. VAUGHAN-NICHOLS

Can Android Tablets Finally Take On the iPad?

Good as the Nexus 7 is, the real game-changer is Android 4.1, known as Jelly Bean.

DO YOU REMEMBER APRIL 2010? That was when the tablet market sprang to life.

Tablets had been around for more than a decade, but hardly anyone outside of certain vertical industries (utilities, for example) had noticed them. When Apple released the iPad in April 2010, everything changed.

The iPad wasn't destined for some niche market; it was an object of desire. Apple claimed that it sold 300,000 iPads on the first day that it was available. No other vendor had technology that could come close to competing with iOS on the iPad.

Many tried. There was the now largely forgotten Moblin operating system, RIM's PlayBook OS, Intel and Nokia's short-lived Meego, Chrome OS and, of course, Android, most promisingly realized in the Samsung Galaxy Tab 10.1. None of them was good enough to seriously compete with Apple, in either 2010 or 2011.

But now it's 2012, and at long last, we have a contender: Google's Nexus 7, running Android 4.1. Until now, the most successful Android tablets were actually e-readers, like Barnes & Noble's Nook and Amazon's Kindle Fire. The Nexus 7 is something much more.

While we don't have hard numbers yet, the Nexus 7 has been selling at the kind of frantic rate not seen outside of Apple devices. Thanks to Android, the Nexus 7 has certain advantages in software selection, customization possibilities and built-in apps. It also has a significant advantage in price: The Nexus 7 costs $200 less than the iPad 2.

Beyond the Nexus 7

If this were just a battle between the iPad and the Nexus 7, I wouldn't be writing this column. I happen to like both devices, and I could argue in favor of either one. I prefer the Nexus 7's smaller size, but I can certainly understand why someone else would want the larger iPad, especially with its Retina display (which, of course, makes the price difference even larger).

No, the real game-changer is Android 4.1, known as Jelly Bean, which will also power Amazon's forthcoming Kindle Fire, which will be much more than a mere e-reader, with its quad-core processor, front-facing camera, micro USB port and bigger, better display. We can also expect to see Jelly Bean in a new model of the Nook, and then the floodgates will open. I expect to see many good Android tablets with 4.1 under the hood, in sizes ranging from the now popular 7 inches to an iPad-matching 10 inches. And good or bad, all of them will be priced below the top-of-the-line iPad.

As we head toward the 2012 holiday season, I expect iPad to finally have serious competition from Android tablets. I suppose it's possible that Microsoft, with its Surface and Windows 8 tablets running on x86 processors and Windows RT tablets running on ARM processors, could be a contender as well, but I don't foresee that. Android and its various hardware vendors have just spent the past two years showing how hard it is to compete with Apple in the tablet market; Windows is too late to the game to compete in this round. It might catch up later, but right now the story is Android. ◆

Steven J. Vaughan-Nichols has been writing about technology and the business of technology since CP/M-80 was cutting-edge and 300bps was a fast Internet connection – and we liked it! He can be reached at sjvn@vna1.com.

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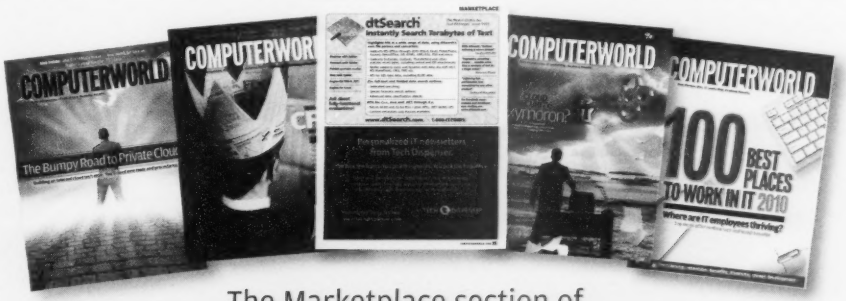

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Source: *Harvey Ad Measurement Study, Computerworld May 10, 2010

Career Watch

Q&A

Allan Boardman

The chair of ISACA's Credentialing Board talks about the organization's **Certified in Risk and Information Systems Control** *certification.*

What does a certification in risk and information systems control cover? CRISC is for professionals who have experience in developing effective controls to manage IT risk. They are the individuals in an enterprise who provide guidance to management on the impact of risk and its effect on business operations and the overall health of the enterprise. They are also responsible for communicating the risk to others throughout the business by establishing a common language for the enterprise.

CRISC, which is based on independent market research and the input of subject-matter experts around the world, is designed to help meet the rising demand for professionals who understand business risk and have the technical knowledge to help achieve effective controls. CRISC-certified professionals have the tools and knowledge to develop a common perspective and language for IT risk within an enterprise.

How does certifying help fill an IT skills gap? Certification provides the enterprise with the confidence that those holding certifications share a similar level of experience and knowledge. Certification can help hiring managers more quickly categorize job candidates by skill level, which is especially important in areas where there are skills gaps or high-growth areas with a large volume of job applicants, not all of whom are equally qualified.

The CRISC professional is able to provide value to an organization by providing insight from an overall organizational perspective on both IT risk and control. The CRISC certification is recognition of that skill and knowledge.

What sort of background is helpful for this type of certification? The CRISC credential is for those who are experienced in both risk and control. The areas of the job practice cover five domains: Risk identification, assessment and evaluation; risk response; risk monitoring; information systems control design and implementation; and IS control monitoring and maintenance.

Experience is required to become certified. Individuals need verified evidence of at least three years of work experience in three of the domains for risk management and IS control.

How might this training and certification help a person understand IT risk management as it applies to overall business process? The focus of the CRISC certification is on the IT risk professional gaining the tools and knowledge to evaluate the enterprise as a whole. Effective enterprise risk management requires an integrated and holistic approach. The first three domains that CRISC focuses on – risk identification, assessment and evaluation; risk response; and risk monitoring – provide the framework, from an organizational perspective, for managing and mitigating IT risk across business processes and technology. In addition, CRISC gives risk professionals a common language for communicating within IT and with the greater enterprise about risk. Based on the input from the CRISC professional, enterprises are then able to make effective risk-based decisions and prioritize efforts and resources to those areas that are most at risk.

SILICON ALLEY SURGING

A study called "New Tech City" makes the case that New York is becoming an important hub of the digital economy. The report, from the Center for an Urban Future, notes that, while there is no way to know how many digital startups have been formed in the city, 486 that were founded in the past five years have received angel, seed or venture capital funding. The report's authors estimate that the actual number of technology startups is well above 1,000. Overall, Silicon Alley is still well behind Silicon Valley as a center of technology entrepreneurship, but New York has surpassed Boston as the No. 2 tech hub in the country.

One metric that shows the rise in prominence for technology in the city is employment growth, with IT growth outstripping the average for the city and many of its traditional economic mainstays. Similarly, a comparison of venture capital activity in New York and other U.S. technology centers offers a sense of the area's economic vitality.

New York Job Growth, 2007-12 IT vs. other sectors

IT	28.7%
City average	3.6%
Broadcasting	0.4%
Securities industry	-5.9%
Legal services	-7%
Publishing	-15.8%
Manufacturing	-29.5%

Growth in Venture Capital Deals by Region, 2007-11

New York	32%
U.S. average	-11%
Silicon Valley	-1%
Los Angeles/ Orange County	-8%
New England	-14%
Texas	-17%
San Diego	-38%

SOURCE: THE CENTER FOR AN URBAN FUTURE'S "NEW TECH CITY" REPORT, MAY 2012

PHOTOGRAPH OF MANHATTAN BY ANGMOKIO

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington. Please reference job # below:
Partnership Tech. Mgr. (Mountain View, CA)
#1615.1609 - Drive strategy & tech that enables Google's prod through partnerships Exp incl: Java, C, or C++ for launched prod; proj mgmt for small-to-med scale implement or submodule within a complex sys; internal stakeholder or external cust interaction while dev prod; prog mgmt w/ cross-funct teams, w/ focus on launch of new prod & svc; & articulating tech aspects to a non-tech audience. Tech Solutions.Eng (Mountain View, CA)
#1615.1385 - Integrate Google prod with customer tech. Exp incl: web tech, incl HTML, XML, XSLT and SSO; ntwk protocol, incl DNS, FTP, SSH, TCP/IP; Python; sys administration; & shell scripts, eg Bash, Korn; & lead tech team
Site Reliability Eng (Mountain View, CA)
#1615.805 Provide tech support to ensure full availability of Google online svc. Exp incl: C++; multithreading; Python; Shell; process sched, monitor & alerting; synchron; dist sys; load & perf test; oo analysis & design; & platform eng, oper sys, Kernel, & Linux; & Java.
Sr Analyst, Partner Strategy & Analytics (Mountain View, CA)
#1615.1335 - Work w sr leadership within Google to define & solve major strategic quest. Exp. incl: strategy or oper at consult firm, investment bank, or Fortune 500 co; & lead oper & strategic initiatives.; and social ntwrk space & online ad.
Database Admin (Mountain View, CA)
#1615.1182- Manage databases & database appl for various internet search engine co proj. Exp incl: Oracle E-Business Suite appl; Oracle Appli Server 9i & 10g; Oracle Database 10g & 11g; Oracle RAC; & Linux.
User Interface Design (Mountain View, CA)
#1615.3598 - Define the user model & user interface for new & existing Google products & features. Exp incl: CSS; HTML; Adobe Photoshop or Fireworks;& leadership of a user-centered design process.
Tech Acct Mgr (Mountain View, CA)
#1615.3422 Create & implement tech acct strategies & support expan of Google partnerships.Exp incl: Internet prod & tech, incl database tech, ntwk tech, HTTP, XML, HTML, Jscript, Unix or Linux; & oo prog lang; cust-facing role.
Bus Ops & Strategy Assoc (Mountain View, CA)
#1615.791 Execute high level bus ops & strat proj defined by Googles exec team. Exp incl: quant analysis, incl fin model & analyze massive amounts of data; B2C strat form for high-tech comp; analyze & recom investments; strat consult proj mgmt; provide emerging mkt & industry insight; & ident emerg & disruptive bus & consumer trends.

SW Eng Positions (Mountain View, CA) Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Exp. include:
#1615.1975 - web tech; C++; Java; Jscript; Python; HTML; CSS; adv algorithms & data struct; HTTP; sw design & dev; oo prog; web appl dev; sys test; funct test; MapReduce; & BigTable.
#1615.1784- Interior Gateway Protocols (IGPs) eg: Intermed Sys - Intermed Sys (IS-IS) & Open Shortest Path First (OSPF); Border Gateway Protocol (BGP); Coarse/ Dense Wave Div Multiplexing (C/DWDM) opt transport sys; design & implement ntwrk sw sys using C, C++ or domain specific lang; design & dev ext to routing protocols; & analysis& synthesis of quantitative ntwrk measurements. Authorship of peer-reviewed publication in comp ntwrk field.
#1615.239 - C or C++; Python; Java; data struct; algorithms; parallel/dist computations; multi- threading; agile prog; large scale dist file sys; & hire sw eng.
#1615.2960 - design, implement, test & maintain subsys; dev Jscript perf optimize & self- modifying code; design & implement differencing & merging algorithms for data struct in realtime collaborative web appl; dev & drive ext outreach prog; manage open source prog; publish tech content for developer; provide end-user tech support; & reverse eng front-end tech.
#1615.912 -C#, C++ & SQL; multithread programming; large scale data process; algorithm design & analysis; mach learn; & parallel & distrib.comp.
SW Eng in Test Position -
#1615.2343 - dev &/or test automation.

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Planet Data

The ICT project PlanetData has vacancies in the consortium for partners having comprehensive research and technological expertise in the area of large-scale semantic data management.

Specific topics in the thematic area

We solicit proposals for research projects that deal with any of the dimensions explored by PlanetData, with a special focus for this call on the combination of aspects related to data dynamicity, quality and provenance, including access control, privacy and trust. Proposals should propose methods and techniques, as well as develop services and applications that consider any of these dimensions or combinations of them. Proposals may use existing data sets available as Linked Data, or open up datasets that fill a gap in existing publishing initiatives (in the context of the Linked Open Data Cloud or beyond) with respect to the types of data they cover (e.g., sensor networks, social media streams), or in terms of the quality of self-descriptive metadata available. Proposals may also aim at providing integrated repositories/portals for specific fields (e.g. Life Sciences, Government, Journalism, etc.) addressing the topics of the call.

Facts and figures

Call open: The call will be open for submissions from 15th August 2012.
Deadline for submission of proposals: 19th September 2012, 17h00 Brussels time.
Expected duration of participation in project: 6 to 12 months, starting earliest in October 2013.
Proposal format: proposals can include one or more organizations eligible for EU funding, and
should have an indicative funding between €15,000 and €50.000.
Call identifier: PD-2-2012
Language in which proposal should be submitted: English.
Web address for further information (full call text/proposal guidelines): http://www.planet-data.eu/news/call2
Email address for further information: alice.carpentier@sti2.at

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Senior Software Engineer (New York, NY) IT Company: Masters +1yrs/Bach plus 5yrs of experience (Comp Science, Engg, Bus. Admin, Math, MIS or Science) Develop, create and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. May analyze and design databases within an application area, working individually or coordinating database development as part of a team. Various skill sets required. Travel may be required to client sites. Apply with 2 copies of resume to HR, **Jean Martin Inc.** 551 5th Avenue, Suite 1425, New York, NY 10176.

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Please reference job # below:
Bus Ops & Strategy Assoc (Mountain View, CA) #1615.3444 - Exec bus ops & strategy defined by Google's exec team. Req'd exp incl: prod dev or prod strategy in tech industry, incl early-stage companies; mgmt consult involving each of the following for Fortune 500 comps: bus probl struct, mkt research & analysis, data mining, & competitor benchmarking; id strategic bus ops & op initiatives, incl expan into new bus lines &/or new mkts; perform fin modeling; & presentations to sr (C-level) execs.
Strategic Partner Manager (Mountain View, CA) #1615.801- Manage Google's business initiatives & relationships with Ad & Search partners. Req'd exp incl: consult & relationship mgmt; creation & interpretation finan models; proj & team mgmt; data analysis; tech industry; online space ex. retail, advertise, ecommerce; negotiation; & bus dev.

SW Eng Positions (Mountain View, CA): Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Req'd exp. include:
#1615.795- oo design & program, incl Java & C++; large data sets; info retrieval; & mach learn.
#1615.1895- C++, multithread; info retrieval, mach learn algorithms, dist comp, mapreduce, & large scale data process.
#1615.1090 - prog in C++ & STL; theoret comp sci, incl advanced algorithms & data struct, parallel & online algorithms; ai; & effec heuristics; pattern recog & mach learn; & combinatorics,incl graph theory.
#1615.303 - sw dev bldg tools & infrastruct related to sw testing; C &/or C++; multithreading; STL; AJAX; web dvlpmt; Jscript; CSS, Python; SQL; large-scale data index; & parallel & dist computing.
#1615.4061- large-scale data min & info extract; design & deploy of large-scale dist data process sys; design of fault-tolerant, high perf dist sys; oo program in C, C++, or Java; & data struct & algorithms.
#1615.2515 - C/C++; data struct; algorithms; sw design; Unix or Linux; dist file sys; & large-scale data index or process.
#1615.802 - design & implement large scale dist data storage & query process sys; C or C++; sys program; parallel process and network sys; data storage & index; query process tech; large scale data analysis; & design & imple mentation of dist sys.
#1615.776 - C or C++; STL; Matlab;Python; UNIX/Linux; Java; Bash; XML; SQL; MySQL; relational database; large-scale data process; large scale mach learn, feat selection, stat inference, hashing, dynamic program, & branch & bound; & parallel & dist computing.

SAP Consultant, Irving, TX & other client locations: (Multiple Openings) Perform tech & functional analysis, systems support, analyze, design specification, configuration, testing, documentation, & implementation based on user needs. Salary DOE. BS/MS (BS + 5 years of exp) in CS, MIS, CIS, Eng (any), Bus, or related in any one of the skill set: 1. SAP R/3 ECC, SAP modules such as SD, MM, SCM, FI, CO, QM, PS, EH&S, PP, BI, BPC, & APO, BADI, IDOC, ALE, EDI, Web Dynpro, SAP Workflow, Unix, & Win NT/2000/XP. MS (BS + 5yrs) W/1yr exp & ref MRP1010. 2. SAP R/3 ECC, SAP Basis, SAP BW, SAP GRC, SAP Solution Manager, SAP ERP, SAP Portal, Run SAP, SAP MDM, SAP XI, SAP Database Admin, Net WeaverCE, ABAP, SQL Server, Oracle, Unix, & Win NT/2000/XP. MS (BS + 5yrs) W/1yr exp & ref BUKG1012. 3. SAP R/3, SAP ECC, ASAP Methodology, SAP modules such as SD, MM, PS, & FI, SAP CRM, SAP SM, SAP LAM, BADI, EDI, FM, ISA, JAVA, BSP, ABAP/4, ABAP Enhancements, MS projects, ARIS, VISIO, Unix, & Win. BS/Equi (2yrs college + 6yr exp) W/2 yrs exp & refKSR1014. 4. SAP R/3, SAP ECC, SAP SRM, SAP SCM, SAP HR, SAP Webflow, SAP Workflow, SAP MDM, BSP, MVC, ABAP, BADI, IDOC, WebDynopro, BRF+, BRF, SUP, SAP BW, ABAP Objects, RFC, Smartforms, SAP Script, EDI, ABAP API, C/C++, VB.Net, Java, Unix, & Win. MS (BS + 5yrs) W/1yr exp & ref NGP1016. 5. SAP R/3, SAP ECC, SAP CRM, SAP HR, SAP Modules SD & MM, ABAP/4, ABAP Enhancements, BAPI, LSMW, BDC, ALV, RFC, BSP, ALE, EDI, IDOC, Smartforms, SAP Script, Unix, & Win. MS (BS + 5years) W/1yr exp & ref KN1018. 6. SAP R/3, SAP ECC, SAP NetWeaver, C, C++, J2EE, Visio, Enterprise Portal, SAP CRM, BOI, BADI, BAPI, Web Services, ABAP/4, WebDynpro, BSP, ALV, SAP modules PM, SD, & MM, BDC, IDocs, ALV, Unix, & Win. MS (BS + 5years) W/1yr exp & ref ICSR1020. 7. SAP R/3, SAP ECC, SAP NetWeaver, SAP CRM, SAP SRM, SAP GRC, SAP Solution Manager, SAP BW, SAP Portal, ABAP/4, Oracle, SQL Server, Business Objects, Java, Win 2003/2008, AIX, & Unix. MS (BS + 5years) W/1yr exp & ref CG1022. Mail resume to Mouri Tech, LLC, 1303 W. Walnut Hill Lane, Suite #285, Irving, TX 75038 or email hr@mouritech.com

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington. Please reference job # below:
SW Eng Positions (Mountain View, CA)
Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Exp. incl.:
#1615.1549 - design & implement large-scale dist sys; Java or C++; multithreading; STL; web appl; multi-tiered sys; Linux; SQL; automate lang process & code generation; & database design.
#1615.2463 - mgmt of prod lifecycle & create designs; design & implement of large-scale dist sys & dist storage sys; oo analysis & design; adv algorithms; web-scale data mine; troubleshoot production emergency & svc downtime; perf analysis of large-scale dist sys; web svc; & appl servers; & lead team of sw eng.
#1615.465 - C++; Java; Python; Shell; Linux; comp ntwk; ntwk security; & cloud compute.
#1615.2823 - data struct; C++, C, & Java; crash dump debug; dev dist server side appl; adv algorithms; concurrency; multithreading; synchronize; embed sw & real-time sys; op sys design; graphics & imaging; appl & design patterns; ntwkng; oo analysis & design; test automation; UI design; & databases.
#1615.3690 - Java oo program & design patterns; dist data struct, incl hash tables & hash consistency; asynchronous prog & multithreading or concurrency arch; distributed or cloud compute & svc-oriented arch; highly available, scalable, fault tolerant, & performant designs & solut; consensus algorithms, eg Paxos; depend inject framework,e.g. Spring & Guice; profile & monitoring tools; HTTP; & XML.
#1615.3012 - design & dev large sw sys; dist computing; info retrieval; data mining; mach learn; data struct; algorithms; complex analysis; analysis & troubleshoot large-scale dist sys; large-scale data process & stat analysis; MySQL; C; C++; Java; Python; & Jscript.
#1615.764 - Lead research, dev & test activities on Google's various internet proj; proj background in stat analysis & simulation tech; R, Maple,& Matlab; STL, Python & CSS; optimization algorithms; op research and perf benchmarking & ntwrk analysis.

SENIOR SYSTEMS ANALYST

Involved in all phases of software development process including scoping, requirement analysis, designing, deploying and post production support following AGILE development methodology and using MS project, Rational Portfolio Manager (RPM) and Optimal Trace. Design user and technical specifications, entity relationship , sequence, activity diagrams for integrating and migrating ecommerce website from Broad Vision Platform to IBM Web Sphere Data Power SOA using BP Mtools. - Develop SharePoint portal site using Xmetal Author Enterprise on DITA architecture, integrating with Apache,Tomcat and Oracle AS and testing the same using automated test scripts. Perform data analysis, data mapping and complex database queries using ODBC API and SQL Server Studio,Queryman across DB2, Teradata Warehouse and creating ad-hoc SAS, Cognos reports. Will use SAS STAT, Caliber RM, PEGA, JIRA, SQL Server Studio, IBM Web Sphere Data Power, SharePoint Xmetal, Apache, Oracle AS, Micro Focus RUMBA and Optimal Trace.Requires Requires Masters degree in Computer Science,Engineering, MIS, MBA.Any suitable combination of education, training and experience would be acceptable.Send resume to Vijay Sharma, President, Flex Consulting Group, Inc., 485 Route 1 South, Suite 4B, Edison, NJ 08817.

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Systems Analyst: Analysis, design, develops, maintain, install, test computer software programs. Test, debug software application. Skills required: Java, J2EE, OOAD, UML, GOF Design Patterns, C#, ASP.NET, VB.NET, ASP, T-SQL, SQL, ORACLE, MYSQL, SAP ABAP, SAP BI, UNIX & WINDOWS PLATFORMS, WEB SERVICES Req. Matrix One PLM, AEF and eMatrix Software, ETL Batch Process running in Mainframe, Bachelor's or equiv. and 2 yrs. of exp. Travelling required, Send resume to SSINFOTEK INC., 9560 Research Drive, Irvine, CA 92618.

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SW Eng Positions (NY, NY): Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Exp. include:
#1615.742- Java appl; design patterns; C++; Python; large-scale data process; data struct; algorithms; web appl; multi-tiered sys; agile dev method; Linux; & info retrieval.
#1615.1922 - C & C++; multithread; STL; large scale algorithm design; adv algorithm design; mach learn; data mining; parallel comp; & info retrieval.
#1615.1148 - C/C++; data struct; algorithms; complex analysis; & multithreading; Unix/Linux & perf debug optimize.
#1615.302 - des & implement of largescale dist syst; prod environ, incl monitor & troubleshoot; file sys; & C++ & STL.
#1615.3508 - arch, design, program & tech lead; bus analysis for sys involving cash flow, acct, & billing; Java, J2EE platform & concurrent prog; design & implement of large-scale dist sys, databases, rule-based sys, message & data mine; tech writing; design & implement of fault tolerance & recovery meth for dist sys; & prob & perf analysis of large scale appl.
#1615.1051 - C++; Java or C#; multithread prog; STL; algorithms; & data struct.

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington.
Please reference job # below:
User Interface Design position (San Bruno, CA): #1615.897 - Define the user model and user interface for new & existing Google prod & features. Req'd exp incl: perf end-to-end prod design; designing Mobile & Web app, refine prod direction through design; using interface design visualization tech; debug comp interfaces; create prototypes; XHTML, CSS, Jscript, Php, & SQL.
Software Engineer Positions (San Bruno, CA): Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Req'd exp:
#1615.951- : C, C++, or Java; design, app dev, debug, & test; dev of multimedia related app on mobile devices; use sensors on mobile platform; and comp vision, pattern recog, stats, sig proces & use of on-device sensors, and mach learn.
#1615.3451 - oo lang; web tech; databa ses & SQL; large-scale data process info ext; parallel & dist comp; design & dev of fault tolerance & recovery methods for dist sys; & prob & perf analysis of large scale dist sys.

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington. Please reference job # below: Partner Dev Mgr position - (NY,NY): Manage Google's high-impact strategic content partnerships. Exp. incl: #1615.3466 - perform spreadsheet analysis; public presentations; perf data mgmt; & drive new bus oppor; partner mgmt or partner-facing negotiation of media or Internet deals. Up to 20% travel req'd.

Acct. Mgr- Branded Sol position - (NY, NY): Perform market research and analysis in connection with Google products. Exp. incl: #1615.768- research & mkt analysis; acct mgmt, sales or mktng; Adwords acct mgmt; search engine mktng w large advertisers; Excel; & data analysis. Up to 25% travel req'd.

SW Eng Positions (NY, NY): Design, dvlp, modify, and/or test sw needed for various internet search engine co. projects. Exp. incl: #1615.872- Java & Jscript; flash dev & action script; web svc & appl #1615.3105 rel data models, query lang, conceptual modeling, art intel & data mining, comp netwks, dist oper sys, & comp security.

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington. Please reference job # below:
SW Eng Position (CAMBRIDGE, MA): Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Exp. include:
#1615.1006: write integration tests for different code compon; Lisp; XML; plan & design sw test automation frameworks in distrib environ; Jscript & Spring; implement test frameworks in oo lang; & script lang.

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#1615.737 - multimedia sys design & implement; video & audio in terms of codec specs, container formats, transport, protocols & media pipeline; video & audio code & process; algorithm design & dev; signal process & multimedia commun; C; C++; STL & multithread program; & hw acceleration, SIMD optimize & code vectorization.
#1615.2104 - Java, C++, or other oo lang; appl dev; dist storage infrastruct; & design, dev, and production of large scale sys.

Senior QA Engineer, Edison NJ - Design, create, debug and execute both automated and manual test cases for multi-tier applications using Quick Test Professional, LoadRunner and Quality Center; Involved in test process, test result, defects reported in Bugzilla and Rational ClearQuest; Develop UNIX and PL/SQL Scripts for backend testing in Oracle Database 10g, MySQL Server, Document Validation, XML and CSV Files Validation and will use MySQL, MS SQL Server 2005, PoolTalk, SF DOMeR, LenderOffice, HP Quality Center 10.0, Quick Test Professional 8.2, LoanRunner 9.50, Oracle 10g, Java, J2EE, HTML, UNIX and XML. Requires Master's degree in Computer Science, Engineering or MIS. Any suitable combination of education, training & experience would be acceptable. Bachelor's degree in related field and 5 years of experience is acceptable in lieu of Master's degree in related field. Send resume to Vijay Sharma, President, Flex Consulting Group, Inc., 485 Route 1 South, Suite 4B, Edison, NJ 08817.

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#1615.2770 -analysis, model &/or proj mgmt for Fortune 500 comp within the telecom, broadband, or wireless industries; finan prob solving & analysis w bus judgment & communicate w mgmt teams; & Excel.
#1615.690 - (Finan. Oper. Analyst) enterprise appl; risk/compliance proj related to credit risk, OFAC, AML & regs per Bank Secrecy & Patriot Act; Excel; leadership of oper initiatives; & interaction w vendors & intl teams. Up to 25% travel req'd.
Prod Mgr (Mountain View, CA)
#1615.2408 - Take responsibility for Google product from conception to launch. Req'd exp incl: dev & design of social, community & discovery prod & tech; proj crossing multiple major prod areas; online consumer prod space mkt expertise, incl social & community-driven products; & negotiation of prod req w multiple in-house teams. Pricing Strategy Assoc (Mountain View, CA) #1615.449 - price analysis; monetization strategy; stat model package; & util of large datasets for Fortune 500 co. Up to 20% travel req'd.

SW Eng Positions (Mountain View, CA): Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Req'd exp. include:
#1615.485 - C, C++, or Java; Python; Jscript; & database prog.
#1615.2506 - HTML; front end dev; & large scale data sys.
#1615.1481 - object oriented programming languages; HTML; HTTP; Web Servers; data structures; algorithms; and operating systems.
#1615.632- C or C++; large data index; info retrieval; mach learn; parallel & distrib comput; large data process & analysis; & perf analysis of info retrieval sys.
#1615.1110 - stat data analysis & modeling; signal process; data filtering & denoising; optimize theory; index, hash & concurrency control of database sys; bldg simulation & eval tools; C, C++, & STL; Python or Perl; Matlab; XML; SQL; HTML; Jscript; parallel & dist computing; comp arch & memory sys/cache perf est; numerical algorithms; & design & test reliable hw/sw sys.
#1615.623 - sw eng or proj leadership; algorithm design & analysis; data struct and oo design & dev; web search; large scale mach learn; pattern recog; info extract; natural lang; math model; large scale data process; data mining & dist comp; & mentor people.
#1615.428- dev sw using Java &/or C++; dev, test,& enhance prod &/or sys util; & design, implement, test, & maintain subsys.
#1615.830 - C or C++; multithreading; STL; Python; large scale dist sys; parallel & dist comp, incl MapReduce; mach learn algorithms; stochastic model; & internet search eng, incl crawling, indexing, & serving.
#1615.3649 - multithreading, concurrency & synch; Java server appl & design patterns; dist syst; writing tech doc; Linux; & load & perf testing.
#1615.3481 - Java or C++; SQL & databases; HTML & Jscript; oo design; web appl frameworks; dist sys; algorithm design; data struct; multi-tier web based sys; & full prod dev lifecycle & deploy.
#1615.1626 - C, C++ &/or Python; large scale data sys; concurrency prog in SMP envi; dist sys perf & resource mgmt; Linux perf mgmt; & file sys, RPC & Linux kernel.
#1615.3663 -Ajax, XML, HTML, & CSS; large scale data process & analysis; middleware & backend tech; stat sig process; quality analysis & improvement; & design & analysis of experiment.
#1615.736 - C, C++, and obj C; algorithms; multi-threaded appl on mobile devices; oo design & arch; & optimize & perf issues on mobile devices;& dev of iOS appl.
#1615.239 - C or C++; Python; Java; data struct; algorithms; parallel/dist computations; multi-threading; agile program; large scale dist file sy=; & hire sw eng.
#1615.860 - C, C++ & Java; AJAX, HTML & CSS; cross-browser platforms; Google App Engine; UI/UX design; prototyping; dev of userfacing sw; user interface frameworks, incl XUL, Flex & XAML; dev of mobile app; Android dev; sw localization; multi-tiered arch; Linux; & product & test cycles & practices.
#1615.1350 - hw; electron schematic; C & C++; Linux op sys; sw perf profiling; & parallel comp.
#1615.862 - UNIX/Linux env sw dev; Perl or Python script lang; oo prog C++; dev of large scale web app w Jscript, HTML, CSS &AJAX.
SW Eng in Test Position (Mountain View, CA) #1615.442 - Java & Jscript; HTTP; WebDriver; Web prot, network & sys; sw arch & design & refactor; & sw test, test automation, continuous build infrastruct, & test-driven dev.

Programmer Analyst (Huntley) IL: Develop and write computer programs to store, locate and retrieve specific documents, data and information. Apply in duplicate to Huntley Beverage Corporation 9714 N RT 47 Huntley IL 60142.

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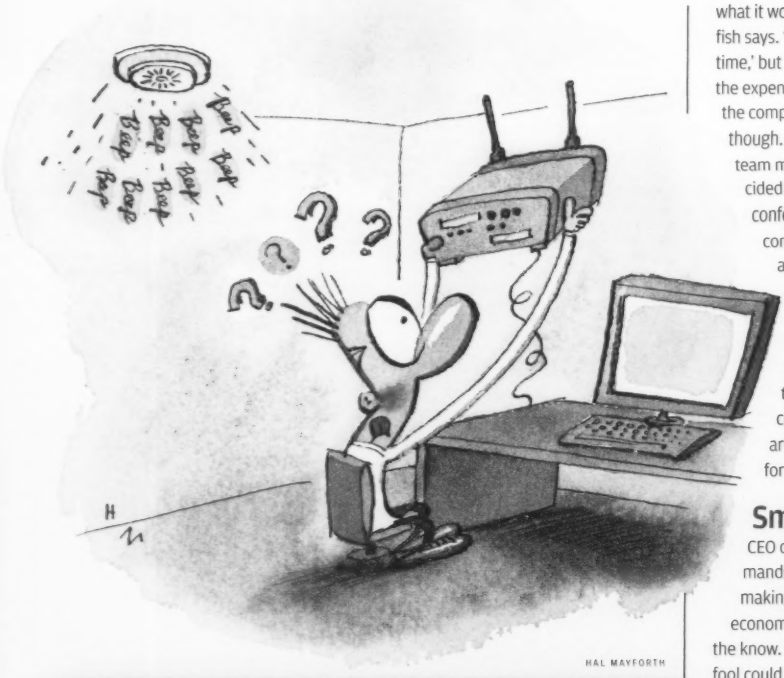
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OPINION

SCOT FINNIE

The Real CoIT

It's a misconception that the consumerization of IT is merely BYOD.

HAVE YOU NOTICED that the term BYOD is on the rise and has become virtually synonymous with the much broader and deeper term "consumerization of IT" (CoIT)?

It's a common misconception that CoIT is merely the trend toward employees using their own smartphones, laptops and tablets for work tasks like accessing corporate email, contacts, calendars and apps. But while mobile hardware is the starting point of CoIT, there's far more to it.

Underlying CoIT is a trend some have called "m-business." It's a "work-style" shift involving businesspeople using mobile devices as their primary means of connecting to the Internet, accessing corporate data and communicating with colleagues. The new work-style, which mixes home and work activities through days, evenings and weekends, has profoundly changed the way people work and is beginning to affect the expectations that companies have of their employees. There are management and HR issues and very real concerns about work/life balance and how that might affect the productivity and well-being of employees. So CoIT is not merely about a different type of hardware; it's about a different way of working.

It's also a movement toward simpler interfaces, inspired by social media, mobile apps and cloud-based apps and services. The rise of app stores overflowing with free or inexpensive problem-solving tools is reshaping user expectations about what software is and what it does. Many IT departments are adopting single-purpose apps adapted to enterprise use. The look and feel of social media software, as well as its people-powered nature, has a huge influence on consumerization — and it has nothing to do with businesspeople bringing their personal devices into the office.

Public clouds aimed at end users are another important aspect of CoIT. The syncing of email, calendars and user data across multiple devices is perhaps the best example of consumer-oriented cloud services used for business purposes.

Of course, CoIT raises security concerns. Most smartphones and tablets aren't built with enterprise-class security — though that is starting to change. But it's not just about hardware security features; when you welcome all manner of devices, the potential for security snafus multiplies. It's also easy to lose a mobile device or have it stolen. All of these factors threaten corporate data. Public clouds and Web-based apps also create security risks.

The vaguely derogatory term BYOD probably started off as some IT person's joke, a takeoff on a similar acronym that rhymes with it. "Bring your own device" takes the end user's point of view, not IT's. But it defines a very narrow aspect of CoIT — and misses some of its most important aspects.

And CoIT is very important. That's why *Computerworld* has been working hard to stay abreast of this fast-growing trend. We recently updated and augmented the topic centers on our website, adding, among others, new topic pages that track all the stories we publish about CoIT and BYOD. *Computerworld*'s parent company, IDG Enterprise, (with some help from yours truly) just launched a new online publication called *CITEworld.com*. "CITE" stands for "consumerization of IT in the Enterprise." *CITEworld* covers CoIT from the IT perspective. IDG Enterprise also launched the companion CITE Conference and Expo in March. Coming in October, the one-day CITE Forum will be held in New York.

It's all part of our commitment to keeping up with the things that really matter to IT today. ◆

Scot Finnie is *Computerworld*'s editor in chief. You can contact him at sfinnie@computerworld.com and follow him on Twitter (@ScotFinnie).

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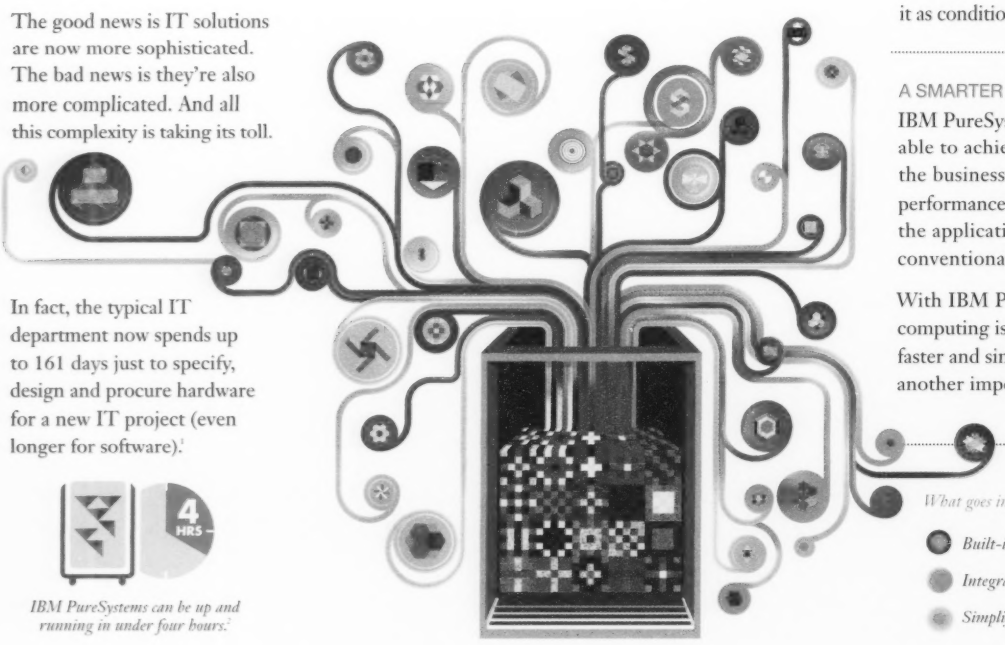
IBM PureSystems can be up and running in under four hours.[2]



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- *Integration by design*
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Recently, IBM unveiled a new class of systems that make all this complexity far less complicated. We call them IBM PureSystems.™

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Take the example of a database: IBM's extensive research on topics like transaction processing, honed through thousands of engagements

LET'S BUILD A SMARTER PLANET.

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1 Based on a 2011 commissioned study conducted by Forrester Consulting on behalf of IBM. 2 Based upon testing of the IBM PureApplication System W1500-96 with time measured from powering on the system to when it is ready to support application deployments and based upon testing of the IBM PureFlex System Express & Standard models containing one chassis and one compute node with the time measured from powering on the system to when it is ready to support a virtual image deployment. 3 Up to 2X application density based upon simulations of virtualized applications on an IBM Flex System x240 Compute Node as compared to a previous generation IBM system. The IBM Flex System x240 Compute Node is available in IBM PureFlex System and IBM PureApplication System. Up to 2X performance of business applications based upon testing of IBM Storwize v7000 "Easy Tier" on previous generation IBM system. IBM Storwize v7000 is included in IBM PureFlex System and IBM PureApplication System. IBM, the IBM logo, ibm.com, PureSystems, Smarter Planet and the planet icon are trademarks of International Business Machines Corp, registered in many jurisdictions worldwide. A current list of IBM trademarks is available on the Web at www.ibm.com/legal/copytrade.shtml. © International Business Machines Corporation 2012.

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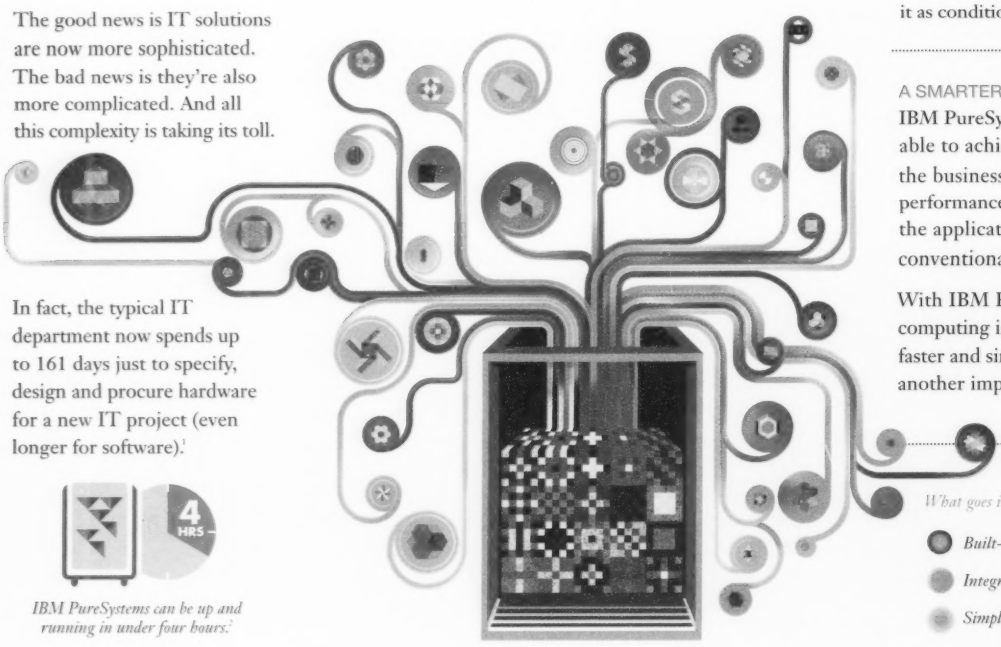

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